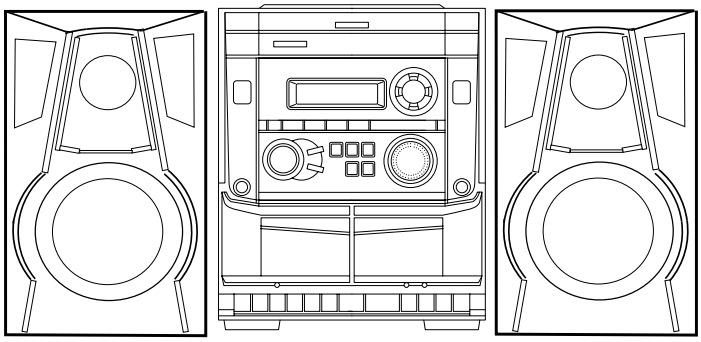
aiwa SERVICE

NSX-DR4 EZ



SERVICE MANUAL

COMPACT DISC STEREO
CASSETTE RECEIVER

BASIC TAPE MECHANISM : ZZM-2 YR1NFS
BASIC CD MECHANISM : AZG-1 ZA3RNDM

SYSTEM	CD CASSEIVER	SPEAKER	REMOTE CONTROLLER
NSX-DR4	CX-NDR4	SX-NBL11	RC-ZAS02

• If requiring information about the CD mechanism, see Service Manual of AZG-1 (S/M Code No. 09-001-335-3NC).

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S/M Code No. 09-008-428-8R5

SPECIFICATIONS

<FM tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	16.8 dBf
Antenna terminals	75 ohms (unbalanced)

<MW tuner section>

Tuning range	530 kHz to 1710 kHz (10 kHz step) 531 kHz to 1602 kHz (9 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<LW tuner section>

Tuning range	144 kHz to 290 kHz
Usable sensitivity	1400 µV/m
Antenna	Loop antenna

<Amplifier section>

Power output	Rated 12 W + 12 W (1 kHz/DIN 45500, T.H.D. 1%, 6 ohms) Reference: 15 W + 15 W (1 kHz/DIN 45324, T.H.D. 10%, 6 ohms) DIN MUSIC POWER: 30W + 30W
Total harmonic distortion	0.1% (6 W, 1 kHz, 6 ohms,DIN AUDIO)
Inputs	VIDEO/AUX: 500 mV
Outputs	SPEAKERS: accept speakers of 6ohms or more PHONES (stereo jack) : accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	50 Hz - 8000 Hz
Recording system	AC bias
Heads	Deck 1 : Recording/Playback head x 1, erase head x 1 Deck 2 : Playback head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05 % (1 kHz, 0 dB)

<Speaker system>SX-NBL11

Speaker System	2 way, bass reflex (magnetic shielded type)
Speaker units	Woofer: 120 mm cone type Tweeter: 20 mm ceramic type
Impedance	6 ohms
Sensitivity	87 dB/W/m
Dimensions (W x H x D)	220 x 324 x 211 mm
Weight	2.0 kg

<General>

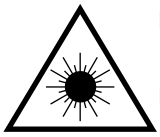
Power requirements	230 V AC, 50 Hz
Power consumption	45 W
Power consumption in standby mode	With power-economizing mode off : 14 W With power-economizing mode on : 0.9 W
Dimensions of main unit (W x H x D)	260 x 324 x 348 mm
Weight of main unit	4.9 kg

• Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

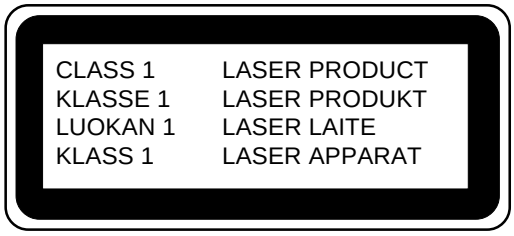
VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION
L'utillisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL
Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

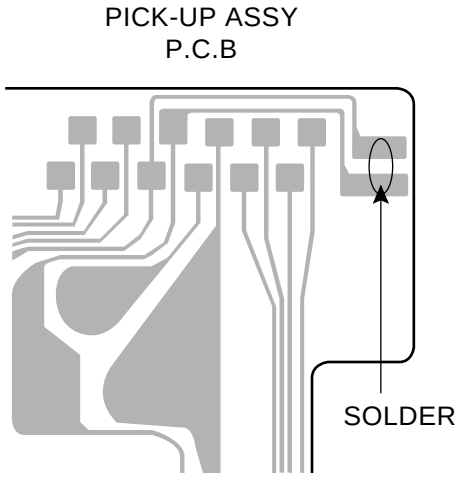


Precaution to replace Optical block

(KSS-213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in right figure.



NOTE ON BEFORE STARTING REPAIR

1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, secondary defect can occur.
In order to prevent the secondary trouble, perform the following measures before starting repair work.

Discharge procedure

① Remove the AC power cord.
② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connect the other end of the lead wire to metal chassis.
③ Contact the other end of the discharging resistor to the positive (+) side (+VH) of C101. (For two seconds)
④ Contact the same end of the discharging resistor as step ③ to the negative (-) side (-VH) of C102 in the same way. (For two seconds)
⑤ Check that voltage across C101 and C102 has decreased to 1 V or less using a multimeter or an oscilloscope.

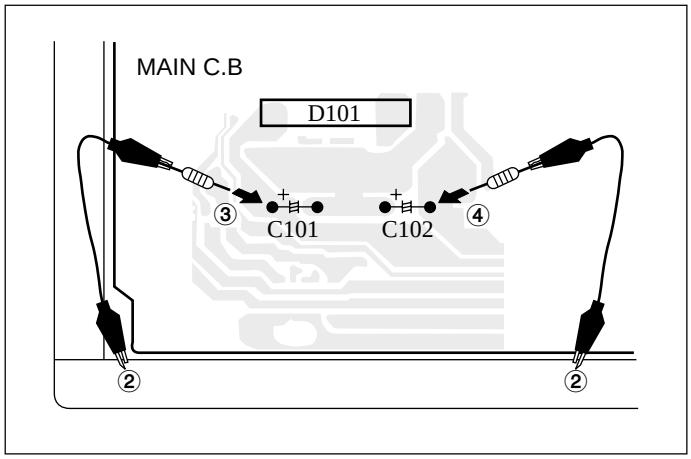


Fig-1

Select a discharging resistor referring to the following table.

Charging voltage (V) (C101, 102)	Discharging resistor (Ω)	Rated power (W)	Parts number
25-48	100	3	87-A00-247-090
49-140	220	5	87-A00-232-090

Note: The reference numbers (C101, C102) of the electrolytic capacitors can change depending on the models. Be sure to check the reference numbers of the charging capacitors on schematic diagram before starting the discharging work.

2. Check items before exchanging the MICROCOMPUTER

Be sure to check the following items before exchanging the MICROCOMPUTER. Exchange the MICROCOMPUTER after confirming that the MICROCOMPUTER is surely defective.

2-1. Regarding the HOLD terminal of the MICROCOMPUTER

When the HOLD terminal (INPUT) of the MICROCOMPUTER is "H", the MICROCOMPUTER is judged to be operating correctly. When this terminal is "L", the main power cannot be turned on. Therefore, be sure to check the terminal voltage of the HOLD terminal before exchange.
When the MICROCOMPUTER is not defective, the HOLD terminal can also go "L" when the POWER AMPLIFIER has any abnormalities that triggers the abnormality detection circuit on the MAIN C. B. that sets the HOLD terminal to "L".

- Good or no good judgement of the MICROCOMPUTER

① Turn on the AC main power.
② Confirm that the main power is turned on and the HOLD terminal of the MICROCOMPUTER keeps the "H" level or not.
③ When the HOLD terminal is "L" level, the abnormality detection circuit is judged to be working correctly and the MICROCOMPUTER is judged to be good.

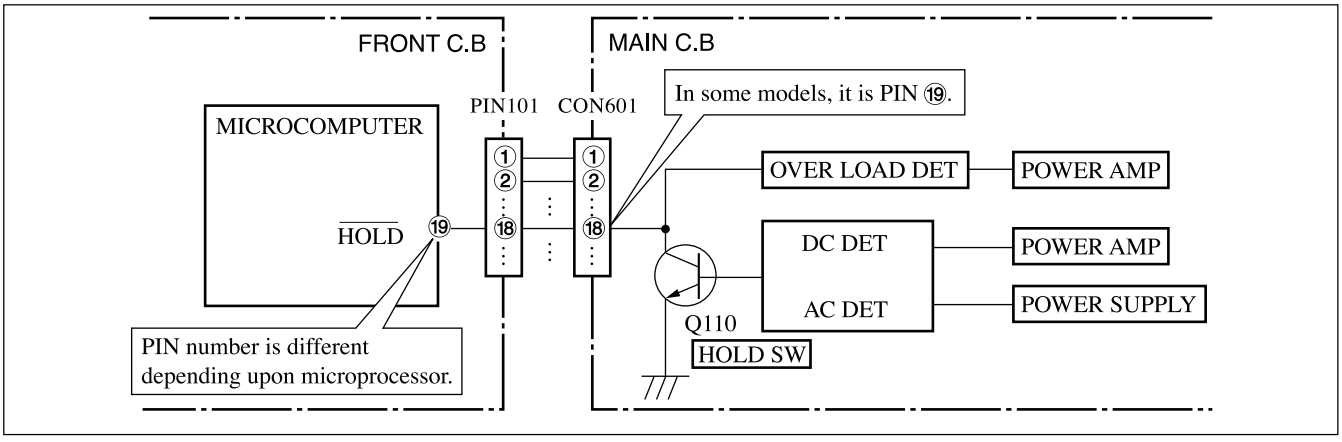


Fig-2-1

In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.
When the above described phenomenon occurs, it can lead to wrong judgement as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

① Remove the AC power cord.

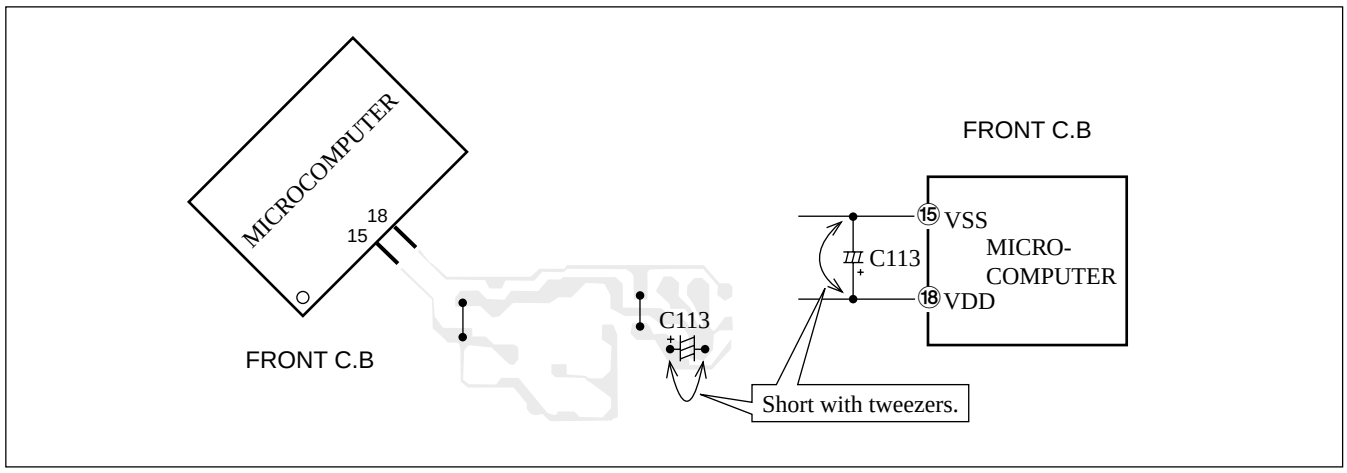


Fig-2-2

② Short both ends of the electrolytic capacitor C113 that is connected to VDD of the MICROCOMPUTER with tweezers.
③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

Note: The reference number or MICROCOMPUTER pin number of transistor (Q110) and electrolytic capacitor (C113) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

2-3. Confirmation of soldering state of MICROCOMPUTER

Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	8A-NFA-615-010		C-IC,M38B57MCH-E236FP
	87-A21-419-040		C-IC,NJM14558MD-TE2
	87-A21-443-040		C-IC,M62495AFP
	87-A21-560-010		IC,LA1844L-A
	87-070-127-110		IC,LC72131 D
	87-A21-629-010		IC,SPS-442-10N
	87-A21-482-010		IC,RPM6938-H4
TRANSISTOR			
	87-026-609-080		TR,KTA1266GR
	89-213-702-010		TR,2SB1370E
	87-026-610-080		TR,KTC3198GR
	87-A30-076-080		C-TR,2SC3052F
	87-A30-075-080		C-TR,2SA1235F
	87-A30-255-010		C-TR,2SB1342
	87-A30-256-010		TR,2SD1933
	87-A30-090-080		FET,2SK2541
	87-A30-484-080		C-TR,KRA102S
	87-A30-468-080		C-TR,KRC102S-RTK
	87-A30-107-070		C-TR,CMBT5401
	87-A30-106-040		C-TR,CMBT5551
	87-A30-091-080		FET,2SJ460
	87-A30-062-080		C-TR,KRC104S
	87-A30-234-080		TR,CSC4115BC
	87-A30-492-080		TR,2SC5343G
	89-327-143-080		TR,2SC2714O
	87-A30-489-080		C-TR,KRA107S
	87-A30-495-080		TR,2SA1981Y
DIODE			
	87-020-465-080		DIODE,1SS133 (110MA)
	87-A40-455-080		DIODE,RL203 GW
	87-A40-553-080		DIODE,1N4003 LES
	87-A40-774-080		ZENER,UZ24BSD
	87-A40-764-080		ZENER,UZ10BSC
	87-A40-270-080		C-DIODE,MC2838
	87-A40-269-080		C-DIODE,MC2836
	87-A40-752-080		ZENER,UZ6.2BSC
	87-A40-739-080		ZENER,UZ2.7BSA
	87-017-149-080		ZENER,HZS6A2L
MAIN C.B			
C9	87-010-196-080		CHIP CAPACITOR,0.1-25
C10	87-010-196-080		CHIP CAPACITOR,0.1-25
C11	87-010-196-080		CHIP CAPACITOR,0.1-25
C12	87-010-196-080		CHIP CAPACITOR,0.1-25
C21	87-A10-520-000		CAP,E 3300-35 M SMG
C22	87-016-051-000		CAP,E 2200-35 SMG
C25	87-010-407-080		CAP, ELECT 33-50 M 11L SME
C26	87-010-406-080		CAP, ELECT 22-50
C30	87-010-384-080		CAP, ELECT 100-25M11LSME
C31	87-010-263-080		CAP, ELECT 100-10V
C32	87-010-197-080		CAP, CHIP 0.01 DM
C34	87-010-380-080		CAP, ELECT 47-16
C35	87-010-406-080		CAP, ELECT 22-50
C36	87-010-381-080		CAP, ELECT 330-16V
C38	87-010-190-080		C-CAP,S 0.01-50 ZF
C50	87-010-384-080		CAP, ELECT 100-25 M 11L SME
C60	87-010-403-080		CAP, ELECT 3.3-50V
C61	87-010-380-080		CAP, ELECT 47-16
C100	87-018-127-080		CAP TC-U 470P
C101	87-010-185-080		C-CAP,S 3900P-50 KB
C102	87-010-185-080		C-CAP,S 3900P-50 KB
C103	87-010-545-080		CAP, ELECT 0.22-50V
C104	87-010-545-080		CAP, ELECT 0.22-50V
C105	87-010-186-080		CAP,CHIP 4700P
C106	87-010-186-080		CAP,CHIP 4700P
C107	87-010-403-080		CAP, ELECT 3.3-50V
C108	87-010-403-080		CAP, ELECT 3.3-50V
C109	87-010-322-080		C-CAP, S 100P-50JCH
C110	87-010-322-080		C-CAP, S 100P-50JCH
C111	87-010-406-080		CAP, ELECT 22-50
C112	87-010-406-080		CAP, ELECT 22-50
C113	87-012-156-080		C-CAP, S 220P-50 J CH
C114	87-012-156-080		C-CAP, S 220P-50 J CH
C119	87-010-197-080		CAP, CHIP 0.01 DM
C120	87-010-197-080		CAP, CHIP 0.01 DM
C123	87-010-197-080		CAP, CHIP 0.01 DM
C124	87-010-197-080		CAP, CHIP 0.01 DM
C125	87-010-196-080		CHIP CAPACITOR,0.1-25
C126	87-010-196-080		CHIP CAPACITOR,0.1-25
C127	87-010-196-080		CHIP CAPACITOR,0.1-25
C128	87-010-196-080		CHIP CAPACITOR,0.1-25
C133	87-010-186-080		CAP,CHIP 4700P
C140	87-010-182-080		C-CAP,S 2200P-50 B
C183	87-010-387-080		CAP,E 470-25 SME
C184	87-010-403-080		CAP, ELECT 3.3-50V
C185	87-018-209-080		CAP, TC U 0.1-50ZF
C200	87-018-195-080		CAP TC-U 1200P
C300	87-018-195-080		CAP TC-U 1200P
C301	87-010-179-080		CAP,CHIP S B1200P
C302	87-010-179-080		CAP,CHIP S B1200P
C303	87-010-178-080		CHIP CAP 1000P
C304	87-010-178-080		CHIP CAP 1000P
C305	87-010-198-080		CAP, CHIP 0.022
C307	87-010-263-080		CAP, ELECT 100-10V
C308	87-010-263-080		CAP, ELECT 100-10V
C309	87-010-311-080		C-CAP, S 12P-50J CH
C310	87-010-314-080		C-CAP, S 22P-50J CH
C311	87-010-598-080		C-CAP,S 0.068-16VRK
C312	87-010-598-080		C-CAP,S 0.068-16VRK
C313	87-010-188-080		CAP,CHIP 6800P
C314	87-010-188-080		CAP,CHIP 6800P
C315	87-010-263-080		CAP, ELECT 100-10V
C317	87-010-546-080		CAP, ELECT 0.33-50V
C318	87-010-546-080		CAP, ELECT 0.33-50V
C320	87-010-196-080		CHIP CAPACITOR,0.1-25
C321	87-010-196-080		CHIP CAPACITOR,0.1-25
C324	87-010-196-080		CHIP CAPACITOR,0.1-25
C325	87-010-196-080		CHIP CAPACITOR,0.1-25
C326	87-010-198-080		CAP, CHIP 0.022
C327	87-010-196-080		CHIP CAPACITOR,0.1-25
C350	87-010-196-080		CHIP CAPACITOR,0.1-25
C360	87-010-401-080		CAP, ELECT 1-50V
C363	87-010-197-080		CAP, CHIP 0.01 DM
C399	87-012-140-080		CAP 470P
C401	87-010-544-080		CAP, ELECT 0.1-50V
C402	87-010-544-080		CAP, ELECT 0.1-50V
C405	87-010-197-080		CAP, CHIP 0.01 DM
C406	87-010-197-080		CAP, CHIP 0.01 DM
C407	87-010-197-080		CAP, CHIP 0.01 DM
C408	87-010-197-080		CAP, CHIP 0.01 DM
C409	87-010-182-080		C-CAP,S 2200P-50 B
C410	87-010-182-080		C-CAP,S 2200P-50 B
C411	87-010-405-080		CAP, ELECT 10-50V
C412	87-010-405-080		CAP, ELECT 10-50V
C452	87-010-382-080		CAP, ELECT 22-25V
C453	87-010-183-080		C-CAP,S 2700P-50 B
C454	87-010-183-080		C-CAP,S 2700P-50 B
C455	87-010-183-080		C-CAP,S 2700P-50 B
C456	87-010-197-080		CAP, CHIP 0.01 DM
C457	87-A12-361-080		CAP, M 5600P-100 J CP
C458	87-010-178-080		CAP, CHIP 1000P-50KB
C459	87-010-175-080		CAP, CHIP 560P-50J SL
C460	87-010-196-080		CHIP CAPACITOR,0.1-25
C461	87-012-158-080		C-CAP,S 390P-50 CH

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C462	87-012-158-080		C-CAP,S 390P-50 CH
C470	87-018-127-080		CAP, TC U 470P-50 BK
C605	87-010-179-080		CAP,CHIP S B1200P
C606	87-010-179-080		CAP,CHIP S B1200P
C609	87-010-213-080		C-CAP,S 0.015-50 B
C610	87-010-213-080		C-CAP,S 0.015-50 B
C611	87-010-545-080		CAP, ELECT 0.22-50V
C612	87-010-545-080		CAP, ELECT 0.22-50V
C613	87-010-545-080		CAP, ELECT 0.22-50V
C614	87-010-545-080		CAP, ELECT 0.22-50V
C615	87-010-154-080		CAP CHIP 10P
C616	87-010-248-080		CAP, ELECT 220-10
C617	87-010-248-080		CAP, ELECT 220-10
C618	87-010-405-080		CAP, ELECT 10-50V
C630	87-016-669-080		C-CAP,S 0.1-25 K B
C669	87-010-322-080		C-CAP,S 100P-50 CH
C670	87-010-322-080		C-CAP,S 100P-50 CH
C677	87-010-197-080		CAP, CHIP 0.01 DM
C771	87-010-263-080		CAP, ELECT 100-10V
C772	87-010-197-080		CAP, CHIP 0.01 DM
C779	87-010-971-080		CAP, CHIP 4700P-50JB
C780	87-010-971-080		CAP, CHIP 4700P-50JB
C782	87-010-197-080		CAP, CHIP 0.01 DM
C783	87-010-197-080		CAP, CHIP 0.01 DM
C784	87-010-197-080		CAP, CHIP 0.01 DM
C785	87-010-197-080		CAP, CHIP 0.01 DM
C786	87-010-197-080		CAP, CHIP 0.01 DM
C788	87-010-149-080		C-CAP,S 5P-50 CH
C789	87-A10-801-080		C-CAP,S 0.022-16 J B
C790	87-A10-801-080		C-CAP,S 0.022-16 J B
C791	87-010-196-080		CHIP CAPACITOR,0.1-25
C792	87-010-197-080		CAP, CHIP 0.01 DM
C793	87-010-404-080		CAP, ELECT 4.7-50V
C794	87-010-322-080		CAP, CHIP 100P-50J CH
C795	87-010-197-080		CAP, CHIP 0.01 DM
C796	87-010-197-080		CAP, CHIP 0.01 DM
C797	87-010-405-080		CAP, ELECT 10-50V
C798	87-010-197-080		CAP, CHIP 0.01 DM
C799	87-010-407-080		CAP, ELECT 33-50V
C800	87-012-369-080		C-CAP,S 0.047-50F
C801	87-010-403-080		CAP, ELECT 3.3-50V
C802	87-012-369-080		C-CAP,S 0.047-50F
C803	87-010-198-080		CAP, CHIP 0.022
C804	87-010-263-080		CAP, ELECT 100-10V
C807	87-010-400-080		CAP, ELECT 0.47-50V
C808	87-010-401-080		CAP, ELECT 1-50V
C809	87-010-401-080		CAP, ELECT 1-50V
C810	87-010-196-080		CHIP CAPACITOR,0.1-25
C814	87-010-197-080		CAP, CHIP 0.01 DM
C815	87-010-403-080		CAP, ELECT 3.3-50V
C816	87-010-403-080		CAP, ELECT 3.3-50V
C818	87-010-180-080		CAP, CHIP 1500P-50 KB
C821	87-010-405-080		CAP, ELECT 10-50V
C823	87-012-349-080		C-CAP,S 1000P-50 J CH
C824	87-010-405-080		CAP, ELECT 10-50V
C825	87-010-596-080		CAP, S 0.047-16
C831	87-010-406-080		CAP, E 22-50 M 11L
C842	87-010-197-080		CAP, CHIP 0.01 DM
C844	87-010-197-080		CAP, CHIP 0.01 DM
C851	87-010-197-080		CAP, CHIP 0.01 DM
C852	87-010-197-080		CAP, CHIP 0.01 DM
C853	87-010-197-080		CAP, CHIP 0.01 DM
C858	87-010-196-080		CHIP CAPACITOR,0.1-25
C859	87-010-196-080		CHIP CAPACITOR,0.1-25
C860	87-010-197-080		CAP, CHIP 0.01 DM
C940	87-010-197-080		CAP, CHIP S 0.01-25 KB
C942	87-010-149-080		CAP, CHIP S 5P-50 CH
C947	87-010-197-080		CAP, CHIP S 0.01-25 KB
C948	87-012-140-080		CAP, CHIP S 470P-50 JCH
C952	87-010-197-080		CAP, CHIP S 0.01-25 KB
C957	87-010-311-080		CAP, CHIP S 12P-50 JCH
C958	87-010-197-080		CAP, CHIP S 0.01-25 KB
C959	87-010-196-080		CHIP CAPACITOR,0.1-25
C960	87-010-196-080		CHIP CAPACITOR,0.1-25
C962	87-010-401-080		CAP, ELECT 1-50V
C963	87-015-785-080		CHIP CAPACITOR, 0.1FZ-25Z
C971	87-010-381-080		CAP, ELECT 330-16V
C972	87-010-404-080		CAP, ELECT 4.7-50V
C973	87-010-197-080		CAP, CHIP 0.01 DM
C974	87-010-197-080		CAP, CHIP 0.01 DM
C979	87-010-322-080		C-CAP,S 100P-50 CH
C982	87-010-196-080		CHIP CAPACITOR,0.1-25
C983	87-010-197-080		CAP, CHIP 0.01 DM
C984	87-010-197-080		CAP, CHIP 0.01 DM
C985	87-010-322-080		CAP, CHIP 100P-50J CH
C987	87-010-197-080		CAP, CHIP 0.01 DM
C989	87-010-197-080		CAP, CHIP 0.01 DM
C993	87-010-178-080		CHIP CAP 1000P
C995	87-010-178-080		CHIP CAP 1000P
C997	87-010-196-080		CHIP CAPACITOR,0.1-25
C999	87-A11-155-080		CAP,TC U 0.01-16 Z F
CF831	87-008-423-010		FILTER, CF SFE10.7MAS3G-A
CF832	82-785-747-010		CF,MS2 GHY,R
CN301	87-A60-620-010		CONN,3P V 2MM JMT
CN351	87-A60-625-010		CONN,8P V 2MM JMT
CN601	87-099-719-010		CONN,30P TYK-B(X)
CN602	87-099-194-010		CONN,6P 6216V
FFE831	A8-6ZA-19H-030		6ZA-1 FEMENM
J101	87-A60-602-010		JACK,DIA6.3 BLK ST W/SW TC
J602	87-A60-881-010		JACK,PIN 2P MSP 242V05 PBSN
J832	87-A60-403-010		TERMINAL,ANT PAL 2P HSP312V05
L101	87-A50-610-010		COIL,1UH-K(MDEC)
L102	87-A50-610-010		COIL,1UH-K(MDEC)
L451	87-007-342-010		COIL,OSC 85K BIAS
L801	87-A50-608-010		COIL,FM DET-N (TOK)
L802	87-A91-551-010		FLTR,PCFJZH-450 L(TOK)
L811	87-005-847-080		COIL,2.2UH(CECS)
L832	87-005-847-080		COIL,2.2UH(CECS)
L941	87-A50-020-010		COIL,ANT LWCOI
L942	87-A50-019-010		COIL,OSC LWCOI
L951	8A-NF8-668-010		COIL,AM PACK 2(TOK)
R653	87-016-669-080		C-CAP,S 0.1-25 KB
R654	87-016-669-080		C-CAP,S 0.1-25 KB
R790	87-010-197-080		CAP, CHIP 0.01 DM
R991	87-010-322-080		C-CAP,S 100P-50 CH
R993	87-010-322-080		C-CAP,S 100P-50 CH
R995	87-010-322-080		C-CAP,S 100P-50 CH
TC942	87-011-253-080		TRIMMER,CER 30P 4.0X4.5
W181	85-NF5-628-010		F-CABLE,7P 2.5
WH1	87-A90-460-010		HLDR,WIRE 2.5-7P
X991	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309

FRONT C.B

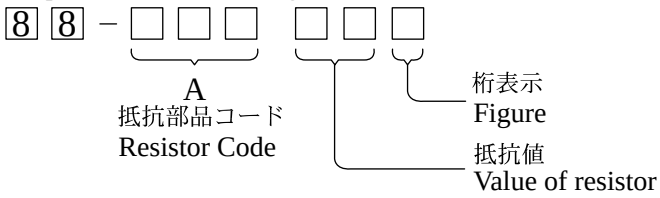
C101	87-010-196-080		CHIP CAPACITOR,0.1-25
C102	87-012-369-080		C-CAP,S 0.047-50F
C103	87-010-374-040		CAP, ELECT 47-10
C104	87-A10-797-040		CAP,E 47-35 M 5L SRM
C105	87-010-192-080		C-CAP,S 0.022-50 F
C107	87-010-196-080		CHIP CAPACITOR,0.1-25
C108	87-010-178-080		CHIP CAP 1000P
C109	87-012-369-080		C-CAP,S 0.047-50F
C110	87-010-197-080		CAP, CHIP 0.01 DM
C111	87-010-196-080		CHIP CAPACITOR,0.1-25
C113	87-010-178-080		CHIP CAP 1000P
C114	87-010-154-080		CAP CHIP 10P
C115	87-010-175-080		CAP 560P
C116	87-010-400-040		CAP,E 0.47-50
C117	87-016-460-080		C-CAP,S 0.22-16 B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C118	87-A10-189-040		CAP,E 220-10
C119	87-A10-189-040		CAP,E 220-10
C120	87-012-156-080		C-CAP,S 220P-50 CH
C123	87-010-196-080		CHIP CAPACITOR,0.1-25
C124	87-010-196-080		CHIP CAPACITOR,0.1-25
C125	87-010-405-040		CAP,E 10-50
C126	87-010-196-080		CHIP CAPACITOR,0.1-25
C129	87-010-374-040		CAP,E 47-10
C210	87-012-156-080		C-CAP,S 220P-50 CH
C212	87-010-404-040		CAP,E 4.7-50 SME
C213	87-010-404-040		CAP,E 4.7-50 SME
C701	87-010-384-040		CAP,E 100-25 SME
C702	87-010-178-080		C-CAP,S1000P-50KB
CN101	87-099-720-010		CONN,30P TYK-B(P)
CN701	87-A60-673-010		CONN,9P H 2MM JMT
CN801	87-099-015-010		CONN,13P 6216V
FL201	8A-NFA-604-010		FL,10-BT-224GNK
L101	87-A50-434-010		COIL,CLK 4.19M(TOKO)
LED101	87-A40-317-080		LED,SLR-342VCT31 RED
S101	87-A91-555-010		SW,RTRY EC12E24504
S301	87-A90-164-080		SW,TACT SKQAB(N)
S302	87-A90-164-080		SW,TACT SKQAB(N)
S303	87-A90-164-080		SW,TACT SKQAB(N)
S304	87-A90-164-080		SW,TACT SKQAB(N)
S305	87-A90-164-080		SW,TACT SKQAB(N)
S306	87-A90-164-080		SW,TACT SKQAB(N)
S307	87-A90-164-080		SW,TACT SKQAB(N)
S308	87-A90-164-080		SW,TACT SKQAB(N)
S309	87-A90-164-080		SW,TACT SKQAB(N)
S321	87-A90-164-080		SW,TACT SKQAB(N)

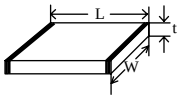
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S322	87-A90-164-080		SW,TACT SKQAB(N)
S323	87-A90-164-080		SW,TACT SKQAB(N)
S324	87-A90-164-080		SW,TACT SKQAB(N)
S325	87-A90-164-080		SW,TACT SKQAB(N)
S326	87-A90-164-080		SW,TACT SKQAB(N)
S327	87-A90-164-080		SW,TACT SKQAB(N)
S328	87-A90-164-080		SW,TACT SKQAB(N)
S329	87-A90-164-080		SW,TACT SKQAB(N)
S330	87-A90-164-080		SW,TACT SKQAB(N)
S331	87-A90-164-080		SW,TACT SKQAB(N)
SFR701	87-024-431-080		SFR,3.3K RH063EC
PT C.B			
C183	87-010-387-080		CAP, ELECT 470-25 M
C184	87-010-403-080		CAP, ELECT 3.3-50V
C185	87-018-209-080		CAP, TC U 0.1-50 ZF
⚠ PT1	8A-NFA-608-010		PT,ANF-A EZ
⚠ PT181	8A-NF8-662-010		PT,SUB ANF-8 (E)
⚠ RY181	87-A90-976-010		RELAY,AC12V SDT-S-112LMR
⚠ T181	87-A60-317-010		TERMINAL, 1P MSC
⚠ T182	87-A60-317-010		TERMINAL, 1P MSC
⚠ WH181	87-A90-460-010		HLDR,WIRE 2.5-7P

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

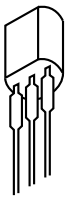
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

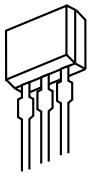
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード ：A Resistor Code ：A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION



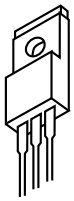
E C B

CSC4115
KTA1266
KTC3198



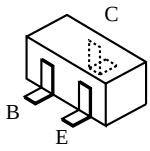
S D G

2SJ460
2SK2541



B C E

2SB1342
2SB1370
2SD1933



2SA1235 KRA102
2SC2714 KRA107
2SC3052 KRC102
CMBT5401 KRC104
CMBT5551

E B C

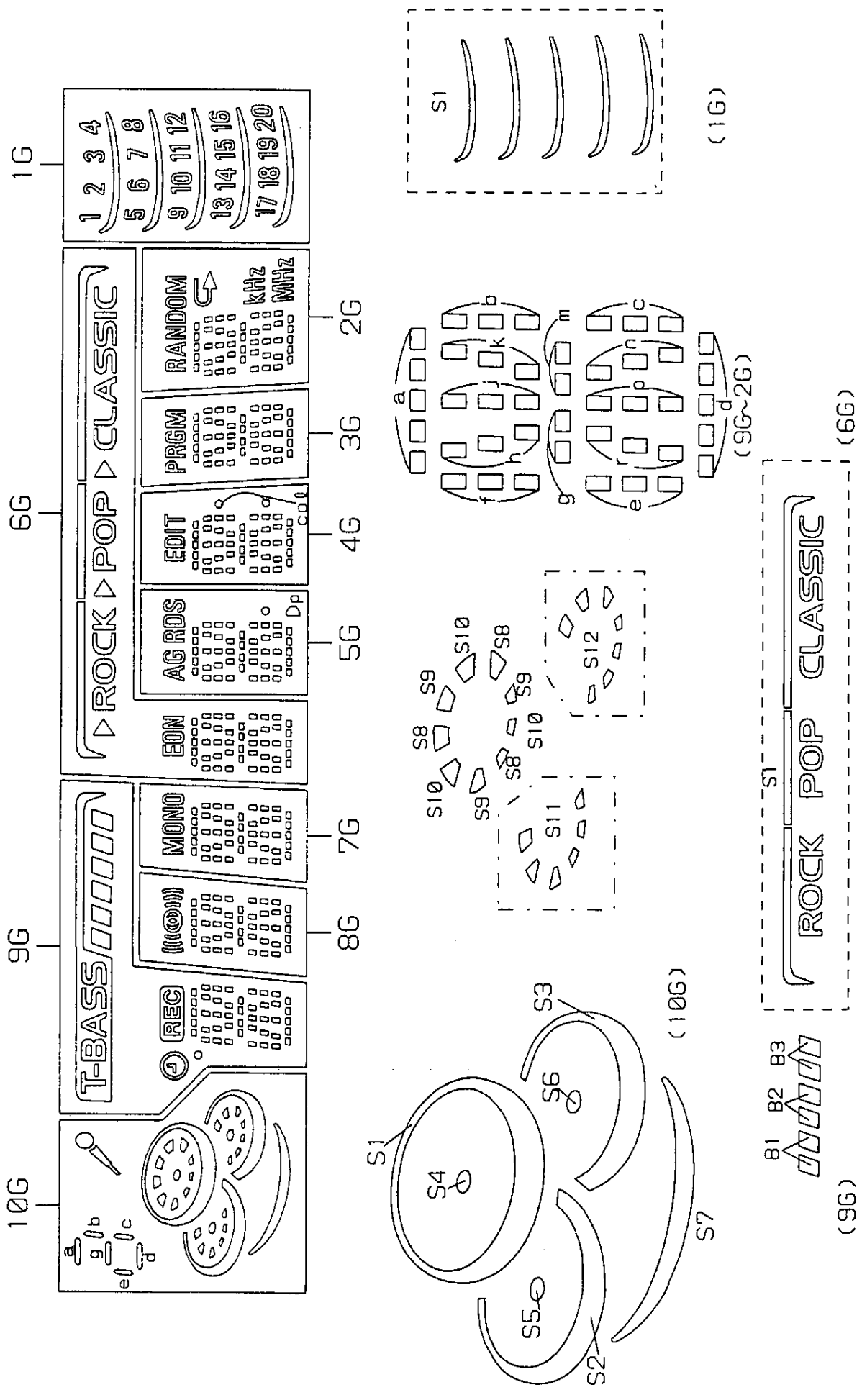
2SA1981

E C B

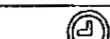
2SC5343

FL (10-BT-224GNK) GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT



ANODE CONNECTION

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	–	d	d	d	d	d	d	d	d	20
P2	S7	n	n	n	n	n	n	n	n	19
P3	–	p	p	p	p	p	p	p	p	18
P4	S11	r	r	r	r	r	r	r	r	17
P5	S5	e	e	e	e	e	e	e	e	16
P6	S2	c	c	c	c	c	c	c	c	15
P7	S12	g	g	g	g	g	g	g	g	14
P8	S6	m	m	m	m	m	m	m	m	13
P9	S3	f	f	f	f	f	f	f	f	12
P10	S10	b	b	b	b	b	b	b	b	11
P11	S9	k	k	k	k	k	k	k	k	10
P12	S8	j	j	j	j	j	j	j	j	9
P13	S4	h	h	h	h	h	h	h	h	8
P14	S1	a	a	a	a	a	a	a	a	7
P15	–			MONO	EON	Dp	col (下)	–	MHz	6
P16	–	REC	–	–	–	AG	col (上)	–	kHz	5
P17			–	–	▷ (CLASSIC)	RDS	EDIT	PRGM		4
P18	a, d, g	BASS	–	–	▷ (ROCK)	–	–	–	–	3
P19	b	B1	–	–	▷ (POP)	–	–	–	–	2
P20	c	B2	–	–	S1	–	–	–	RANDOM	1
P21	e	B3	–	–	–	–	–	–	–	S1

32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

A B C D E F G H I J K L M N O P Q R S T U

A MAIN C.B

TO CD MECHANISM AZG-1
FC602
CN602

TO DECK2
CON301
TO CN301

TO DECK1
CON351
TO CN351

TO B FRONT C.B
CN701
CN601

J832
ANTENNA

MW/LW LOOP

TFFM 75Ω

J602
VIDEO/AUX

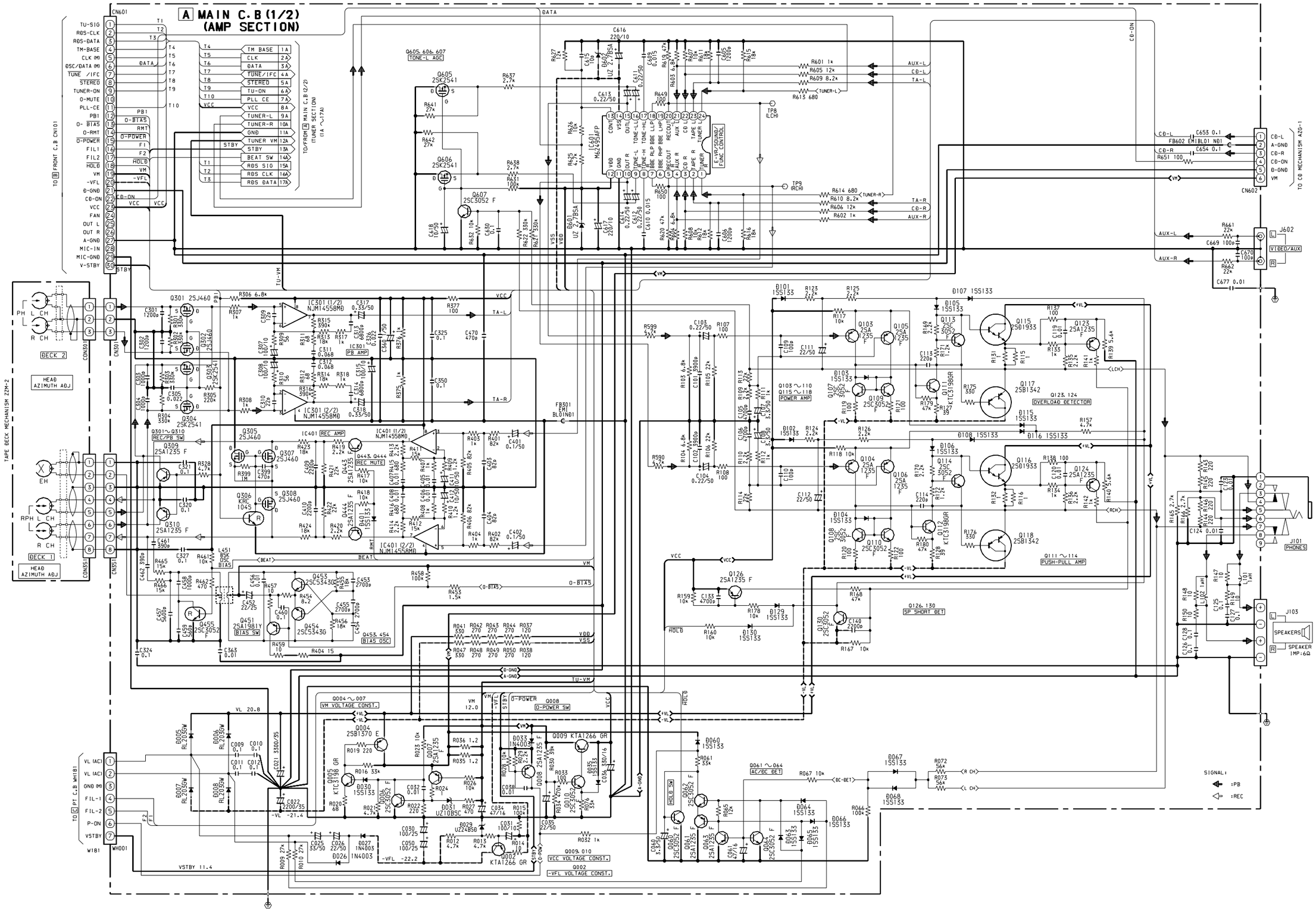
TO C PT C.B
WH181
WHT

WH001

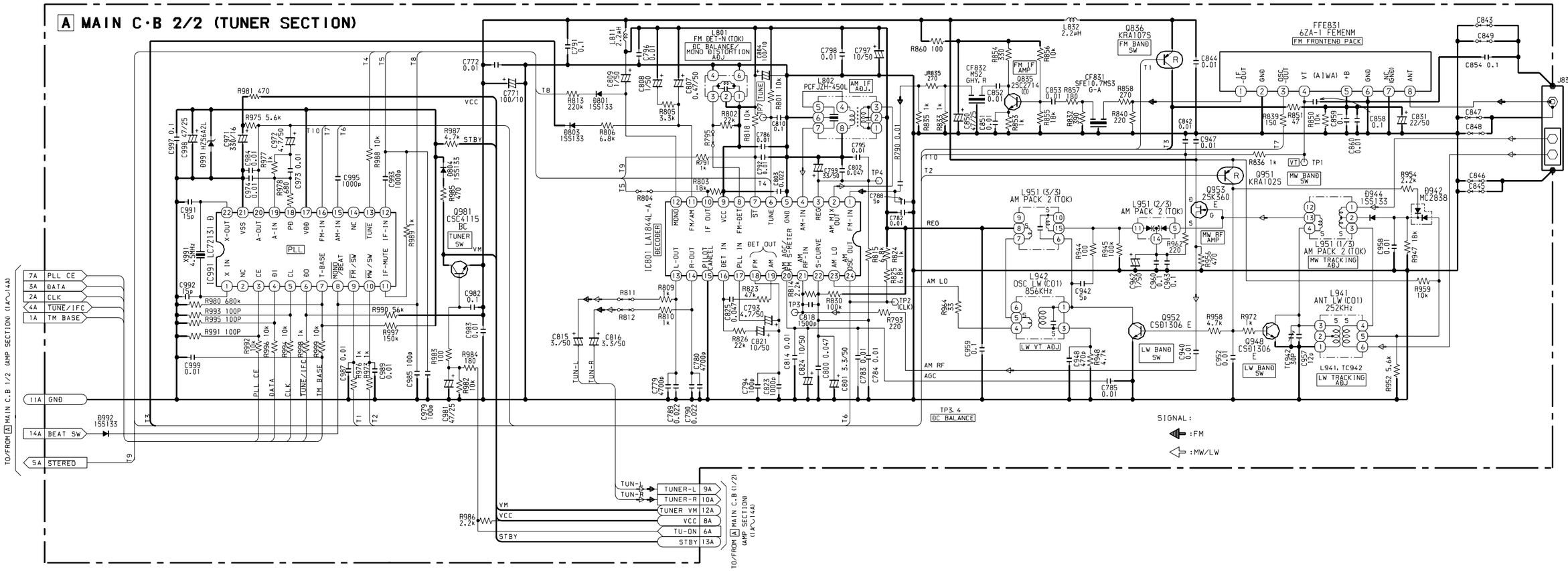
J103
SPEAKERS
SPEAKER IMP:6Ω

J101
PHONES

SCHEMATIC DIAGRAM – 1 (MAIN 1 / 2 : AMP SECTION)



SCHEMATIC DIAGRAM – 2 (MAIN 2 / 2 : TUNER SECTION)



B FRONT C.B

TO CD MECHANISM AZG-1

FC801

FL201 (DISPLAY)

LED101 STANDBY

IC102 (REMOTE SENSOR)

S301 POWER

CN801

FL201

IC101

IC102

LED101

TP5 (K-SCAN)

FROM A MAIN C.B

CN601

CN101

S308 POP

S307 ROCK

S309 T-BASS

S306 CLASSSIC

S101 VOLUME

S304 CD

S327 VIDEO/AUX

S326 TUNER/BAND

S303 TAPE

S302 ECO

S329 ▶PRESET

S328 ■CLEAR

S305 ❚❚SET

S325 DISC/CHANGE

S321, 322, 323 DISC DIRECT PLAY 1-3

S331 ▶▶❙/▶▶ UP

S330 ❙◀◀/◀◀ DOWN

S324 ▲OPEN/CLOSE

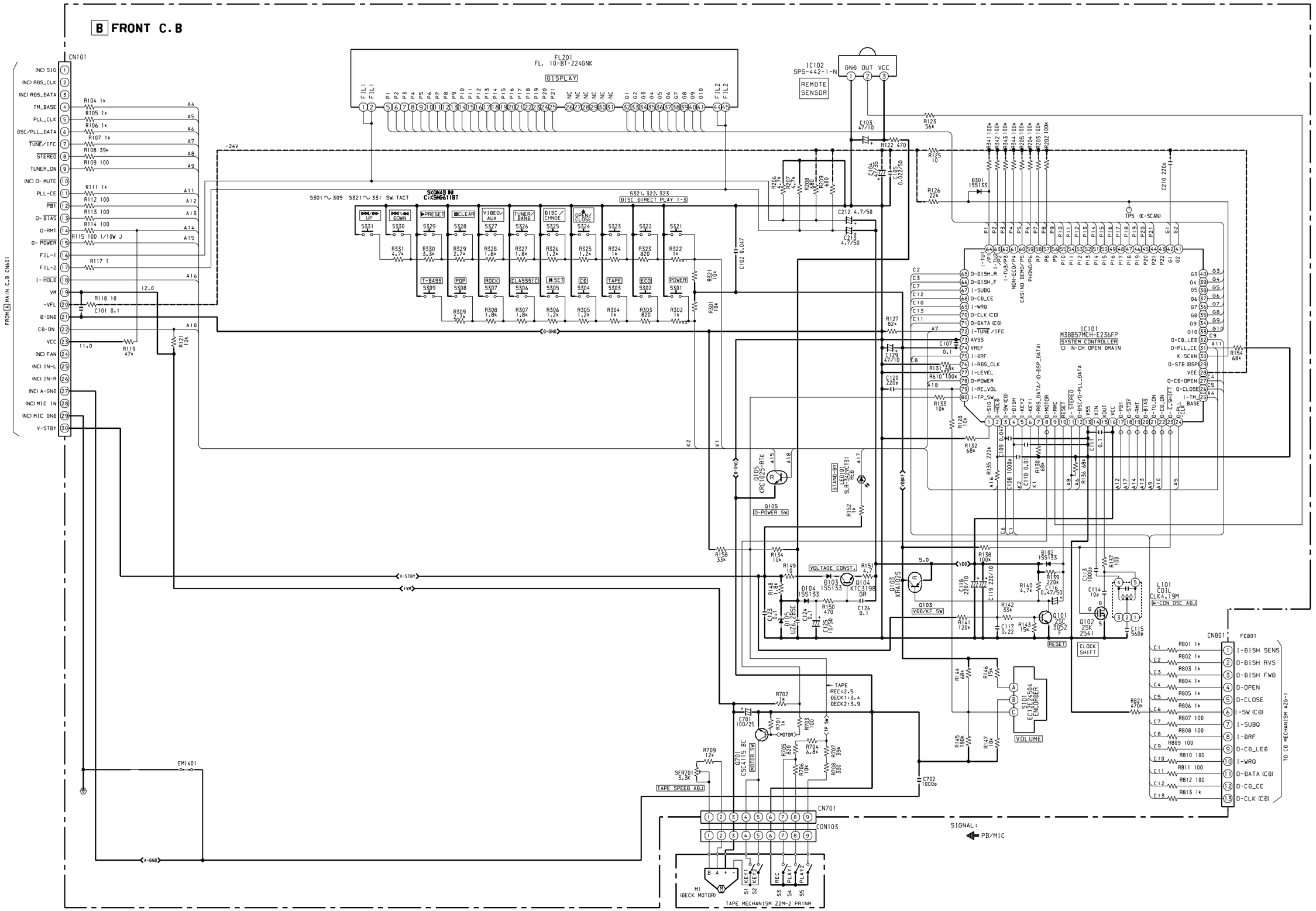
CON103

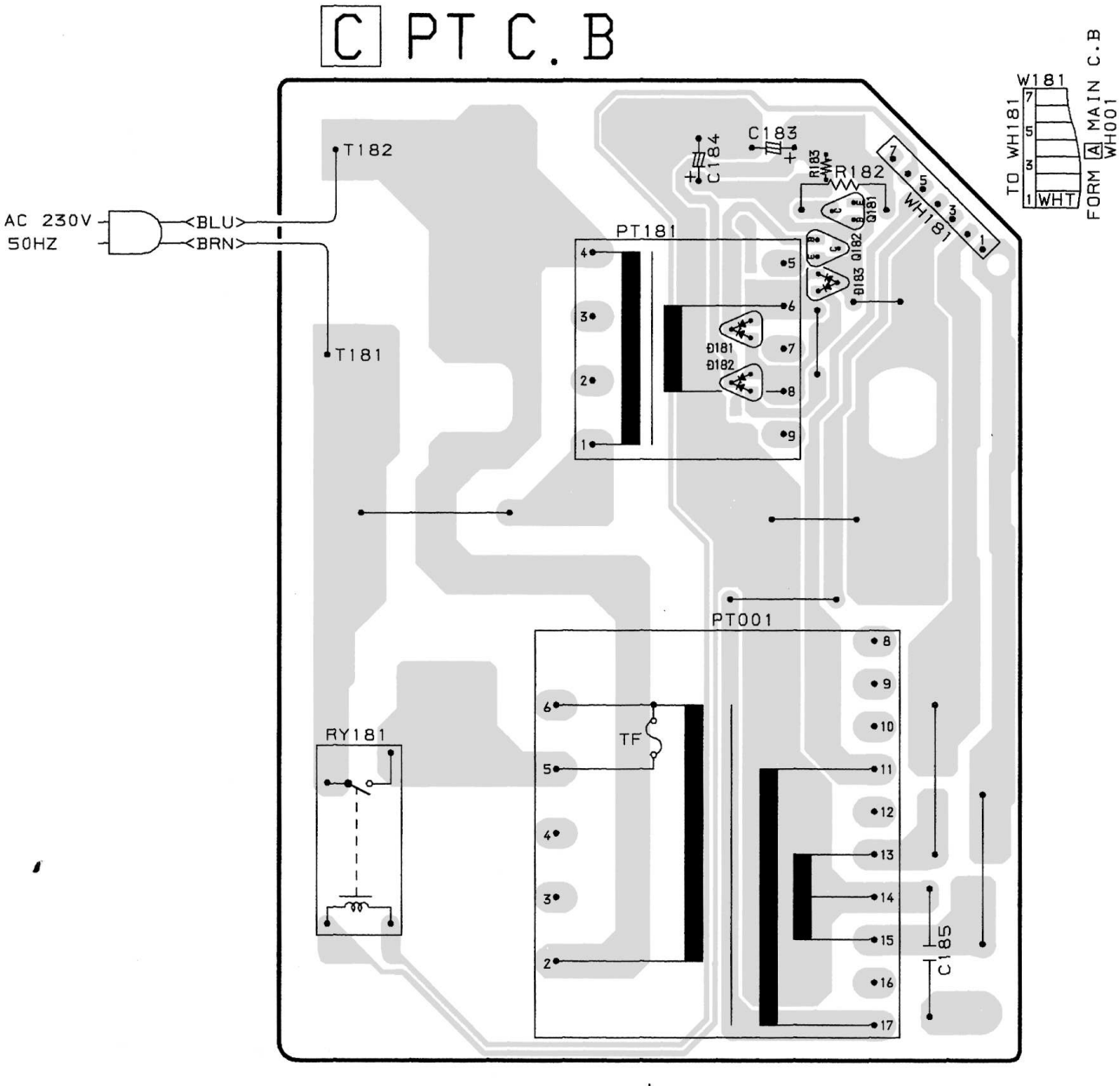
TO TAPE MECHANISM ZZM-2 PR1NM

CN701

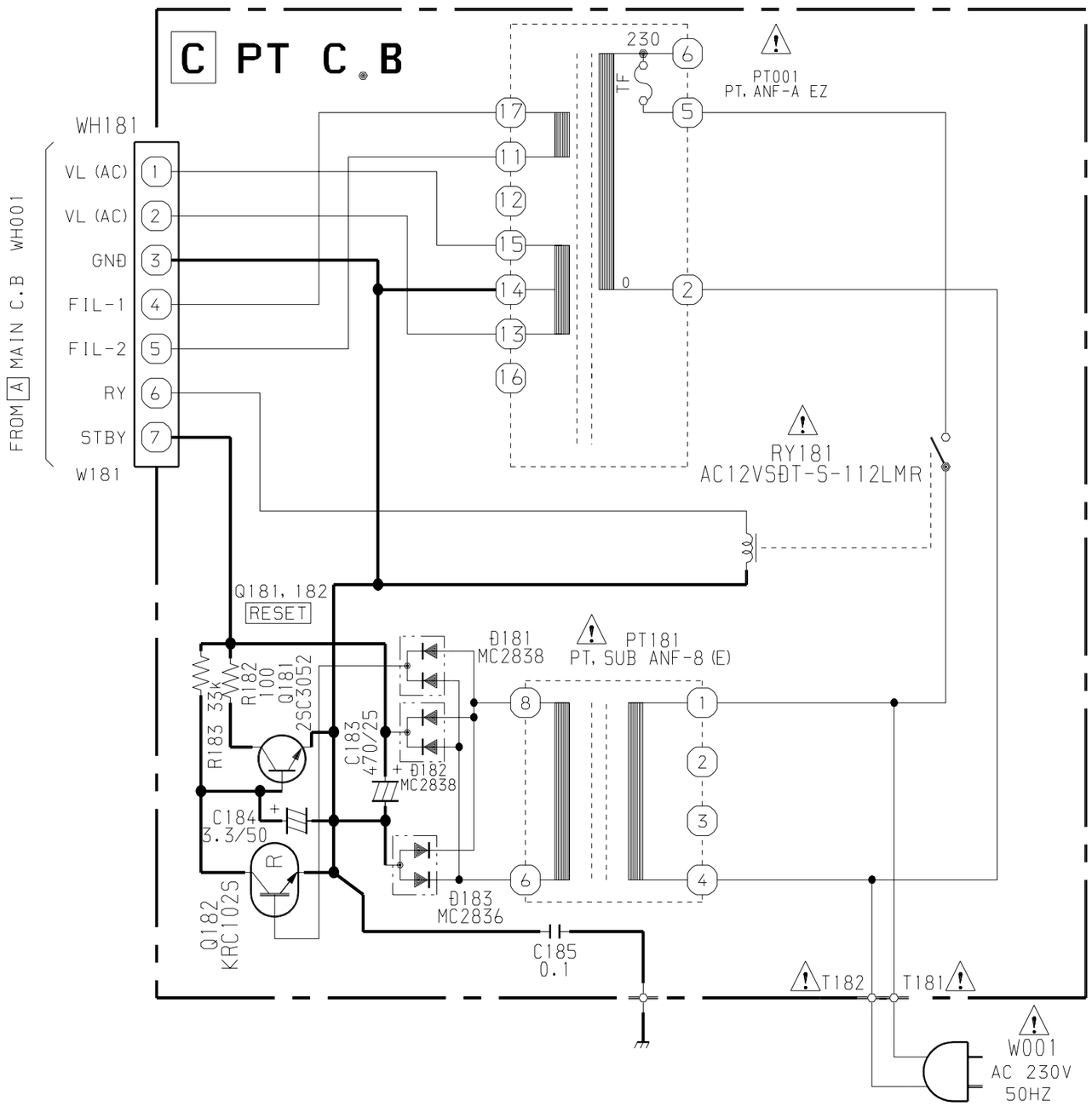
EMI401

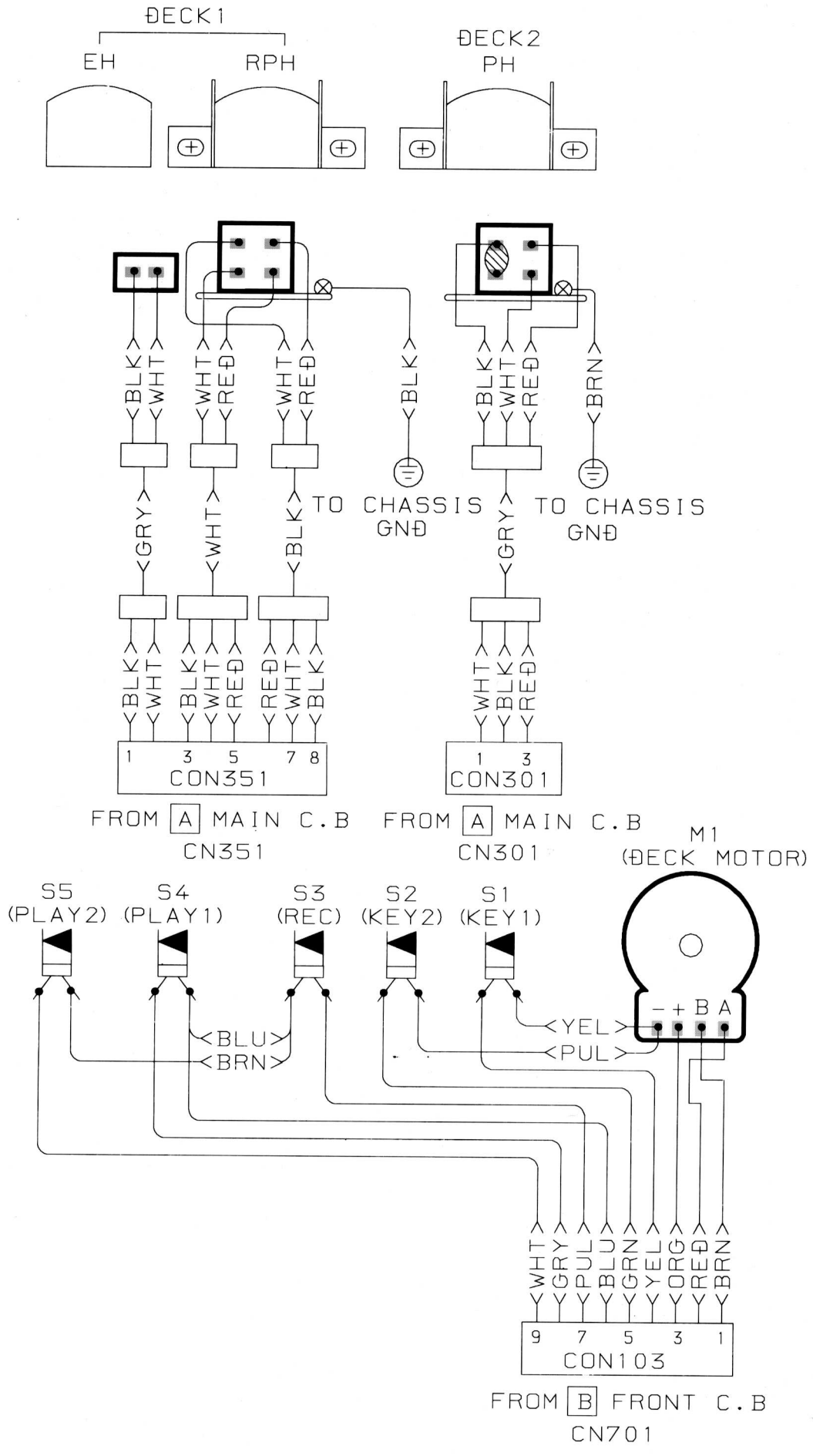
SCHEMATIC DIAGRAM – 3 (FRONT)




C PT C.B
AC 230V
50HZ
<BLU>
<BRN>
T182
T181
PT181
PT001
RY181
TF
C184
C183
R183
R182
Q181
Q182
Q183
D181
D182
WH181
W181
TO WH181
FORM A MAIN C.B
WH001
WHT
C185

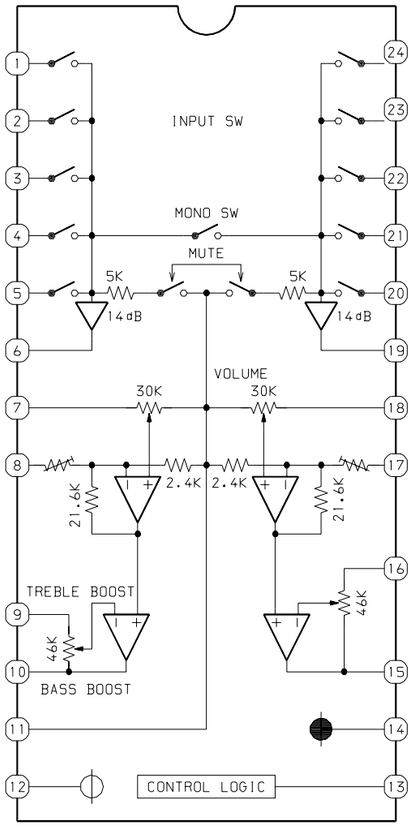
SCHEMATIC DIAGRAM – 4 (PT)



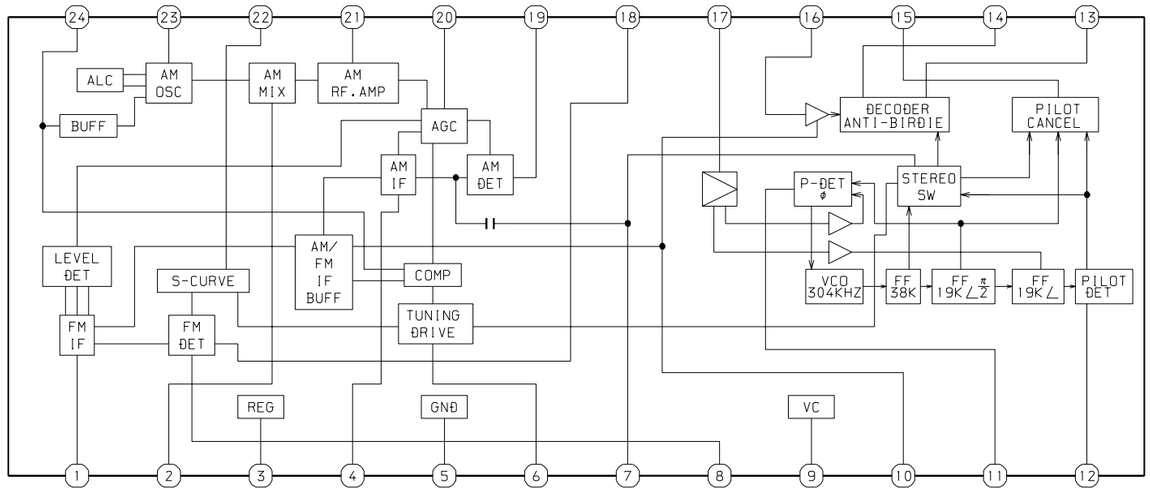

ĐECK1
EH
RPH
ĐECK2
PH
BLK
WHT
WHT
REĐ
WHT
REĐ
BLK
BLK
WHT
REĐ
BRN
GRY
WHT
BLK
TO CHASSIS
GNĐ
GRY
TO CHASSIS
GNĐ
BLK
WHT
BLK
WHT
REĐ
REĐ
WHT
BLK
WHT
BLK
REĐ
1 3 5 7 8
CON351
1 3
CON301
FROM A MAIN C.B
CN351
FROM A MAIN C.B
CN301
M1
(ĐECK MOTOR)
S5
(PLAY2)
S4
(PLAY1)
S3
(REC)
S2
(KEY2)
S1
(KEY1)
BLU
BRN
YEL
PUL
− + B A
WHT
GRY
PUL
BLU
GRN
YEL
ORG
REĐ
BRN
9 7 5 3 1
CON103
FROM B FRONT C.B
CN701

IC BLOCK DIAGRAM

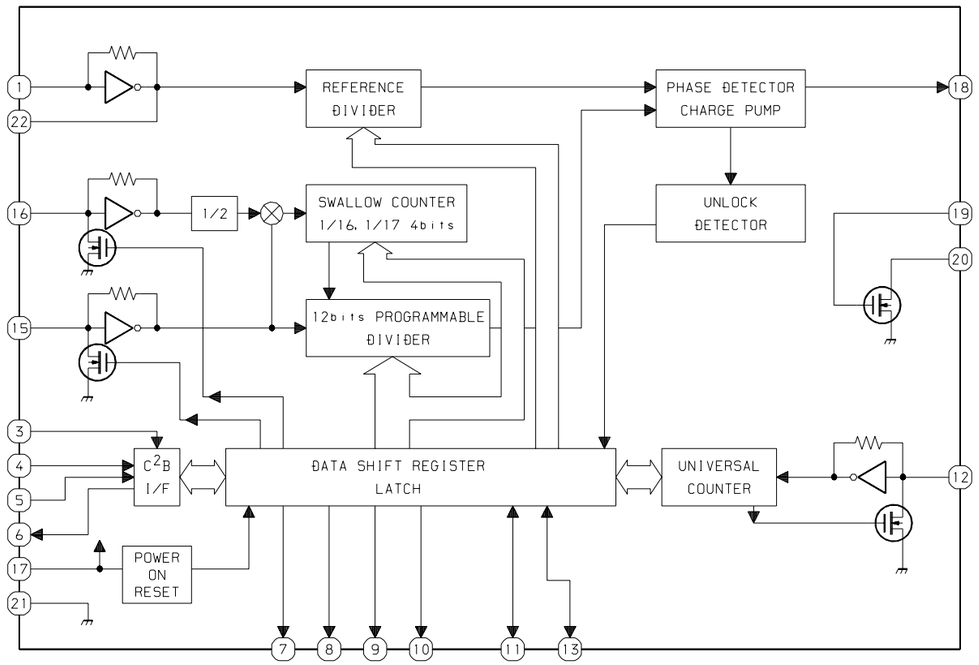
IC, M62495AFP



IC, LA1844L-A



IC, LC72131D



IC DESCRIPTION

IC, M38B57MCH-E236FP

Pin No.	Pin Name	I/O	Description
1	I-SIG	I	RDS signal level A/D input. (Not used)
2	I-$\overline{\text{HOLD}}$	I	Hold voltage level A/D input.
3	I-SW (CD)	I	CD mecha SW A/D input.
4	I-DISH	I	CD turn-table position check A/D input.
5	I-KEY2	I	KEY2 A/D input.
6	I-KEY1	I	KEY1 A/D input.
7	I-RDS-DATA/ (O-DSP_DATA)	I/O	RDS data input / DSP IC data (V-CD) output. (Not used)
8	O-MOTOR	O	Deck motor supply ON/OFF output.
9	I-RMC	I	System remote control signal input. ("L"=ACTIVE)
10	$\overline{\text{RESET}}$	I	System reset input. ("L"=RESET)
11	I-$\overline{\text{STEREO}}$	I	Tuner stereo input. ("L"=STEREO)
12	O-DSC/O-PLL_DATA	O	Function IC control & PLL data output.
13	VSS	-	GND.
14,15	XIN, XOUT	I/O	4.19MHz system CLK input / output.
16	VCC	-	Power supply input.
17	O-PB1	O	Deck 1/2 switch output. ("L"=PLAYBACK DECK 1)
18	O-$\overline{\text{STBY}}$	O	Standby LED ON/OFF output. ("L"=ON)
19	O-$\overline{\text{RMT}}$	O	REC mute output. ("H"=MUTE)
20	O-$\overline{\text{BIAS}}$	O	Record bias ON/OFF output. ("L"=ON)
21	O-TU_ON	O	Tuner supply ON/OFF output. ("H"=ON)
22	O-CD_ON	O	CD supply ON/OFF output. ("H"= ON)
23	O-$\overline{\text{C.SHIFT}}$	O	MICON clock shift output. ("L"=SHIFT)
24	O-PLL-CLK	O	PLL IC CLK output.
25	I-TM_BASE	I	8 Hz time base input.
26	O-CLOSE	O	CD door close output.
27	O-CD-OPEN	O	CD door open output.
28	VEE	-	Power supply input for FL display.
29	O-STB(DSP)	O	DSP IC strobe output. (Not used)
30	K-SCAN	O	Initial key scan output.
31	O-PLL_CE	O	CD PLL IC chip enable output.
32	O-CD_LED	O	CD flash window LED output.
33~42	G10~G1	O	FL grid output (G10~G1).
43	P22	O	FL segment output (P22). (Not used)
44~58	P21~P7	O	FL segment output (P21~P7).
59	PHONO/P6	I/O	PHONO diode input / FL segment output (P6).
60	CASINO DEMO/P5	I/O	CASINO DEMO diode input (Not used) / FL segment output (P5).
61	NON-ECO/P4	I/O	ECO OFF diode input / FL segment output (P4).
62	I-TU3/P3	I/O	TU 3 diode input (Not used) / FL segment output (P3).
63	I-TU2/P2	I/O	TU 2 diode input (Not used) / FL segment output (P2).
64	I-TU1/P1	I/O	TU 1 diode input (Not used) / FL segment output (P1).

Pin No.	Pin Name	I/O	Description
65	O-DISH_R	O	CD turn-table reverse turn output.
66	O-DISH_F	O	CD turn-table forward turn output.
67	I-SUBQ	I	Sub code-Q data input.
68	O-CD_CE	O	CD DSP chip enable output.
69	I-WRQ	I	CD WRQ input.
70	O-CLK (CD)	O	CD control clock output .
71	O-DATA (CD)	O	CD control data output.
72	I-$\overline{\text{TUNE}}$/IFC	I	Tuner SD input / IF count input.
73	AVSS	-	GND.
74	VREF	-	Reference voltage.
75	I-DRF	I	CD DRF input.
76	I-RDS_CLK	I	RDS clock input. (Not used)
77	I-LEVEL	I	Connected to GND through a resistor.
78	O-POWER	O	SYSTEM Power ON/OFF output. ("H"=ON)
79	I-RE_VOL	I	Rotary encoder A/D input.
80	I-TP_SW	I	Deck mecha SW A/D input.

ADJUSTMENT <TUNER / DECK>

< TUNER SECTION >

1. Clock frequency Check
   Settings : • Test point : TP2 (CLK)
   Method : Set to MW 1602kHz and check that the test point is 2052kHz ± 0.045kHz.

2. MW VT Check
   Settings : • Test point : TP1 (VT)
   Method : Set to MW 1602kHz and check that the test point is less than 8.0V.
   Then set to 531kHz and check that the test point is more than 0.6V.

3. FM VT Check
   Settings : • Test point : TP1 (VT)
   Method : Set to FM 87.5MHz, 108.0MHz and check that the test point is more than 0.5V (87.5MHz) and less than 8.0V (108.0MHz).

4. MW Tracking Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location :
   L951 (1/3) 1000kHz
   Method : Set to AM(MW) 999kHz and adjust L951 (1/3) to MAX.

5. FM Tracking Check
   Settings : • Test point : TP8(Lch), TP9(Rch)
   Method : Set to FM 98.0MHz and check that the test point is less than 13dBµV.

6. MW IF Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location :
   L802 ..... 450kHz

7. LW VT Adjustment
   Settings : • Test point : TP1 (VT)
   • Adjustment location : L942
   Method : Set to LW 144kHz and adjust L942 so that the test point becomes 1.3V ± 0.05V.
   Then set to LW 290kHz and check that the test point is less than 8.0V.

8. LW Tracking Adjustment
   Settings : • Test point : TP8 (Lch), TP9 (Rch)
   • Adjustment location :
   L941 ..... 144kHz
   TC942 ..... 290kHz
   Method : Set up TC942 to center before adjustment. The level at 144kHz is adjusted to MAX by L941. Then the level at 290kHz is adjusted to MAX by TC942.

< DECK SECTION >

9. Tape Speed Adjustment (DECK 1)
   Settings : • Test tape : TTA–100
   • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location : SFR701
   Method : Play back the test tape and adjust SFR701 so that the frequency counter reads 3000Hz ± 5Hz.

10. Head Azimuth Adjustment (DECK 1, DECK 2)
    Settings : • Test tape : TTA–330
    • Test point : TP8(Lch), TP9(Rch)
    • Adjustment location : Head azimuth adjustment screw
    Method : Play back (FWD) the 8kHz signal of the test tape and adjust screw so that the output becomes maximum.
    Next, perform on REV PLAY mode.

11. PB Frequency Response Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–330
    • Test point :TP8(Lch), TP9(Rch)
    Method : Play back the 315Hz and 8kHz signals of the test tape and check that the output ratio of the 8kHz signal with respect to that of the 315Hz signal is within 4dB.

12. PB Sensitivity Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–200
    • Test point : TP8(Lch), TP9(Rch)
    Method : Play back the test tape and check that the output level of the test point is 110mV ± 3.5dB.

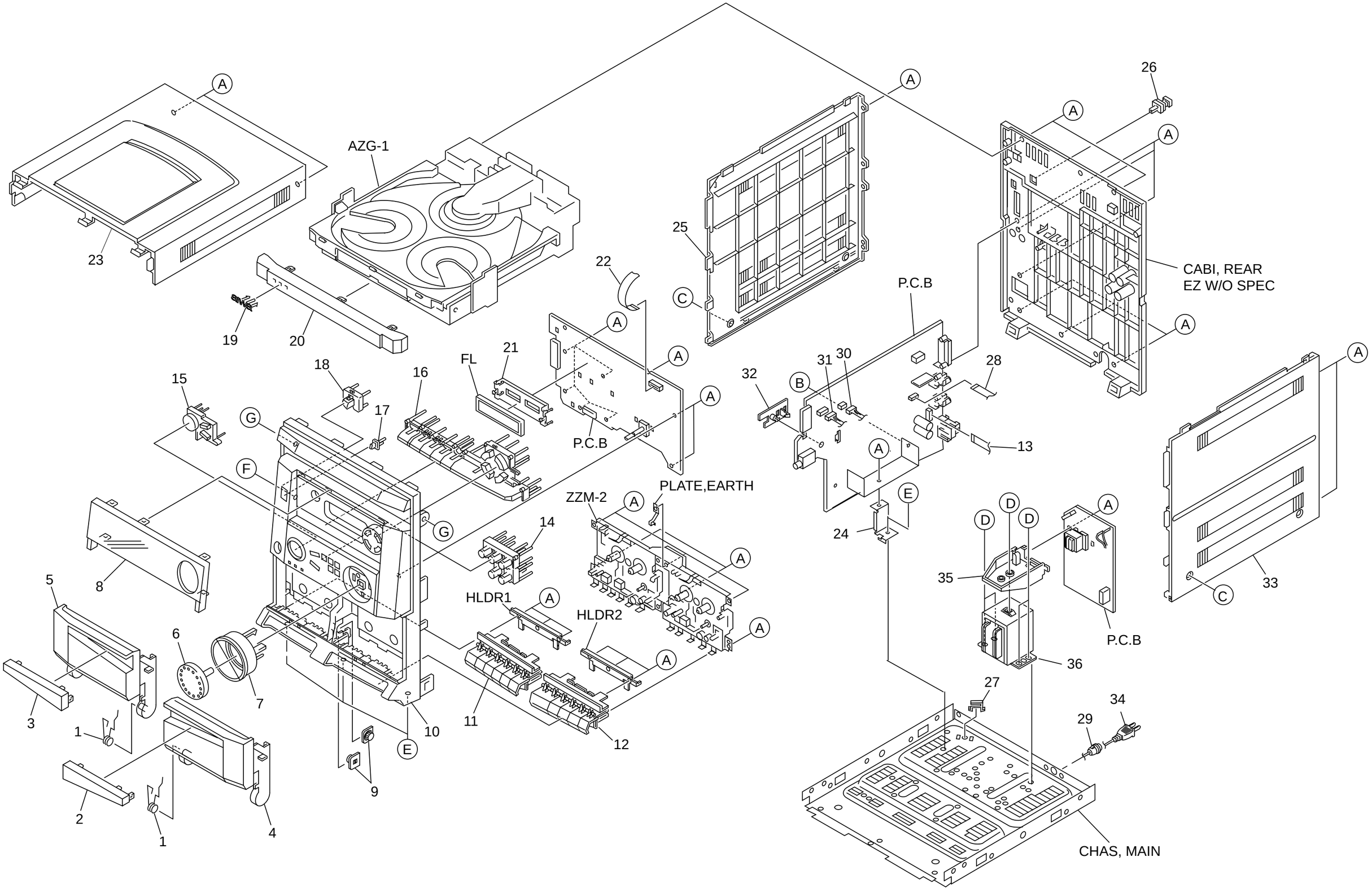
13. REC/PB Frequency Response Check (DECK 1)
    Settings : • Test tape : TTA–602
    • Test point : TP8(Lch), TP9(Rch)
    • Input signal : 1kHz / 8kHz (LINE IN)
    Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the test points becomes -20VU. Record and play back the 1kHz and 8kHz signals and check that the output of the 8kHz signals is 0dB ± 5dB with respect to that of the 1kHz signal.

14. REC/PB Sensitivity Check (DECK 1)
    Settings : • Test tape : TTA–602
    • Test point : TP8(Lch), TP9(Rch)
    • Input signal : 1kHz (LINE IN)
    Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at TP8, TP9 becomes 0VU. Record and play back the 1kHz signals and check that the output is -2dB ± 3.5dB.

< FRONT SECTION >

15. u-CON OSC Adjustment
    Settings : • Test point : TP5(K-SCAN)
    • Adjustment location : L101
    Method : Insert AC plug with pressing of TUNER function key and POWER key. Adjust L101 so that the frequency across the test point is 58.350Hz ± 0.02Hz.

MECHANICAL EXPLODED VIEW 1 / 1



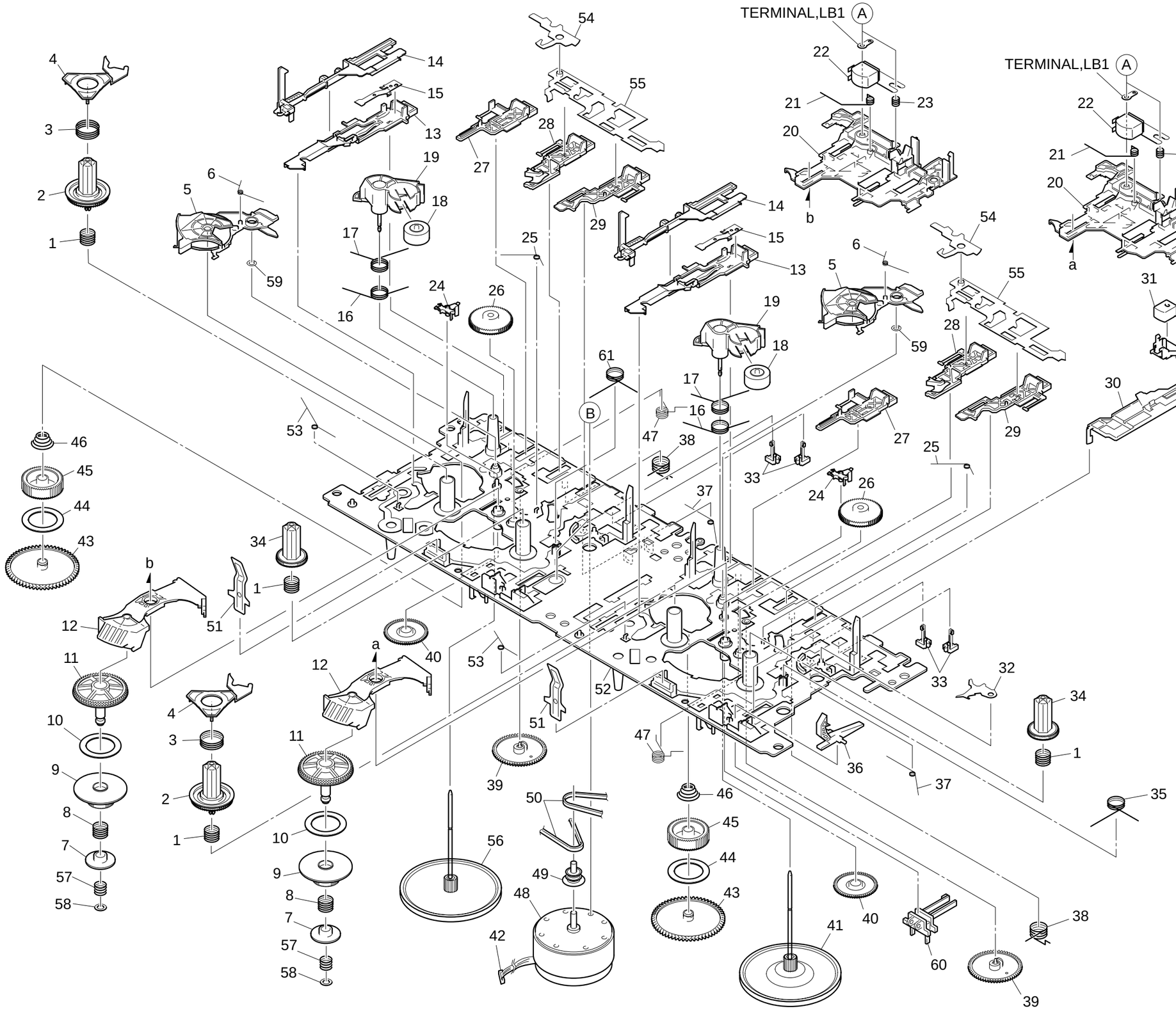
MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-NF7-218-010		SPR-T,CASS
2	8A-NFZ-007-110		WINDOW,CASS 2
3	8A-NFZ-006-110		WINDOW,CASS 1
4	8A-NFZ-004-110		BOX,CASS 2
5	8A-NFZ-003-110		BOX,CASS 1
6	8A-NFZ-011-010		KNOB,RTRY VOL
7	8A-NFZ-012-010		RING,VOL
8	8A-NFZ-058-010		WINDOW,DISP EZ DR4
9	86-NFZ-231-010		DMPR,70
10	8A-NFZ-001-210		CABI,FR U
11	8A-NFZ-016-110		KEY,CASS 1
12	8A-NFZ-017-110		KEY,CASS 2P
13	85-NF5-628-010		F-CABLE 7P-2.5
14	8A-NFZ-010-010		KEY,OPE
15	8A-NFZ-013-210		KEY,CD
16	8A-NFZ-009-010		KEY,FUN
17	8A-NFA-018-010		REFLECTOR,ECO
18	8A-NFZ-008-010		KEY,POWER
19	87-CE3-023-010		BADGE,AIWA 30N SILV
20	8A-NFZ-002-010		PANEL,TRAY H
21	8A-NFA-208-010		GUIDE,FL 100-25 ANFA
22	88-913-221-110		FF-CABLE, 13P 1.25 220MM
23	8A-NFA-062-010		PANEL,TOP V-2
24	88-NF9-213-010		HLDR,PWB MAIN
25	8A-NFA-063-010		PANEL,LEFT V-2
26	84-ZG1-245-210		CAP,OPTICAL
27	87-NF4-221-010		HLDR,CABLE
28	88-906-251-110		FF-CABLE,6P 1.25
29	87-085-185-010		BUSHING, AC CORD (E)
30	8A-NFA-633-010		CONN ASSY,3P (PH)
31	8A-NFA-634-010		CONN ASSY,8P RPB
32	8A-NFA-214-010		HLDR,PWB M ANFA
33	8A-NFA-067-010		PANEL,RIGHT V-2 PL
⚠ 34	87-A80-157-010		AC CORD ASSY,E BLK CC
35	8A-NF9-211-010		HLDR,PWB PT HI
⚠ 36	8A-NFA-608-010		PT,ANF-A EZ
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-NF4-224-010		S-SCREW,IT3B+3-8 CU
C	87-067-641-010		UTT2+3-8(W/O SLOT)BL
D	87-078-200-010		S-SCREW,ITC+4-8 R
E	87-067-688-010		BVTT+3-6
F	87-723-096-410		QT2+3-10W/O SLOT BL
G	87-721-097-410		QT2+3-12 GLD

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink

TAPE MECHANISM EXPLODED VIEW 1 / 1



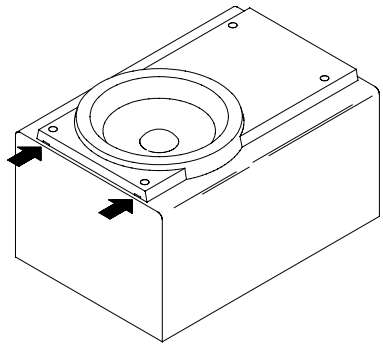
TAPE MECHANISM PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-ZM1-254-310		SPR-C,REEL R
2	8Z-ZM1-225-110		GEAR,REEL R
3	8Z-ZM1-253-210		SPR-C,AUTO SENSOR
4	8Z-ZM1-217-110		LEVER,AUTO SENSOR
5	8Z-ZM1-212-210		LEVER,T-UP
6	8Z-ZM1-245-310		SPR-T,AUTO
7	8Z-ZM1-236-010		CLR,SLIP FF/REW
8	8Z-ZM1-252-110		SPR-C,FF/REW
9	8Z-ZM2-213-010		GEAR,SLIP FR A ZZM-2
10	8Z-ZM1-269-010		FELT,FF/REW 2
11	8Z-ZM1-238-110		GEAR,SLIP FF/REW B 2
12	8Z-ZM1-237-110		LEVER,FF/REW 2
13	8Z-ZM1-209-510		LEVER,PAUSE
14	8Z-ZM1-218-210		LEVER,E-LOCK H
15	8Z-ZM1-256-010		SPR-P,PAUSE
16	8Z-ZM1-244-110		SPR-T,T-UP
17	8Z-ZM1-247-310		SPR-T,PINCH
18	8Z-ZM1-261-110		ROLLER ASSY,PINCH
19	8Z-ZM1-221-210		LEVER,PINCH
20	8Z-ZM1-205-310		LEVER,PLAY
21	8Z-ZM1-248-210		SPR-T,BRG
22	87-A90-403-110		HEAD,RPH MS15R
23	84-ZM2-227-310		SPR-C,AZIMUTH
24	8Z-ZM1-216-110		LEVER,AUTO
25	8Z-ZM1-246-110		SPR-T,AUTO 2
26	8Z-ZM2-214-110		GEAR,IDL REW ZZM-2
27	8Z-ZM2-212-010		LEVER,STOP ZZM-2
28	8Z-ZM1-207-010		LEVER,FF
29	8Z-ZM1-206-010		LEVER,REW
30	8Z-ZM1-210-010		LEVER,REC
31	87-A90-404-010		HEAD,EH LE15B
32	8Z-ZM2-218-010		LEVER,REC LOCK ZZM-2
33	87-A91-492-010		SW,LEAF MSW18560
34	8Z-ZM1-226-010		GEAR,REEL L
35	8Z-ZM1-241-210		SPR-T,PLAY
36	8Z-ZM1-220-110		LEVER,REC SENSOR
37	8Z-ZM1-249-210		SPR-T,FR
38	8Z-ZM1-242-310		SPR-T,FF/REW
39	8Z-ZM3-244-110		GEAR,CAM TD20
40	8Z-ZM1-232-010		GEAR,IDL FF/REW
41	8Z-ZM3-256-010		FLY-WHL ASSY,M3 R
42	8Z-ZM2-601-010		CONN ASSY,9P ZZM-2
43	8Z-ZM1-228-010		GEAR,SLIP T-UP B
44	8Z-ZM1-265-010		FELT,T-UP
45	8Z-ZM1-227-010		GEAR,SLIP T-UP A
46	8Z-ZM1-251-210		SPR-C,T-UP SLIP
47	8Z-ZM1-243-310		SPR-T,STOP/PAUSE
48	87-A91-532-010		MOT,MS15U2LW1A
49	8Z-ZM1-235-010		PULLEY,MOT
50	8Z-ZM2-216-010		BELT,MAIN M
51	8Z-ZM1-260-010		SPR-P,CASETTE
52	8Z-ZM2-201-510		CHAS ASSY,ZZM-2
53	8Z-ZM1-255-310		SPR-T,E-LOCK
54	8Z-ZM2-219-010		LEVER,E-OPEN ZZM-2
55	8Z-ZM1-214-310		LEVER,LOCK
56	8Z-ZM1-290-010		FLY-WHL ASSY,ZZM-1
57	8Z-ZM1-257-110		SPR-C,F/R
58	8Z-ZM1-275-010		W-L,1.47-4-0.25
59	87-B10-301-010		W-L,1.63-3.2-0.5 SLIT
60	87-A91-494-010		SW,LEAF MSW17820
61	8Z-ZM1-241-010		SPR-T,PLAY
A	84-ZM2-242-010		S-SCREW,AZ1-2-6.4
B	8Z-ZM2-220-110		V+2.6 ZZM-2

SPEAKER DISASSEMBLY INSTRUCTIONS

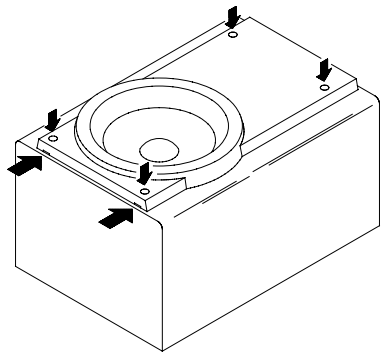
Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



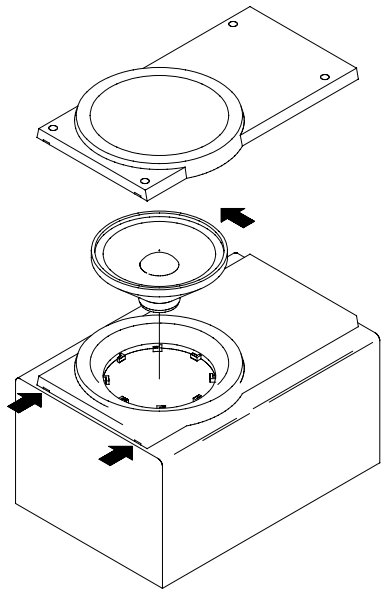
Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

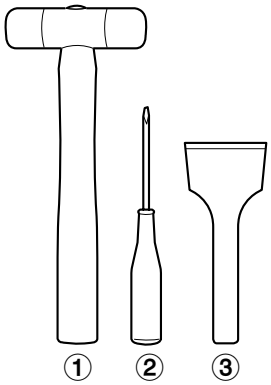


Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



Type.4



TOOLS

① Plastic head hammer
② (⊖) flat head screwdriver
③ Cut chisel

How to Remove the PANEL, FR

1. Insert the (⊖) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (⊖) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.

2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.

3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

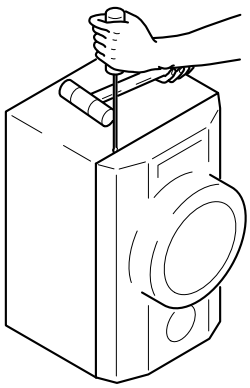


Fig-1

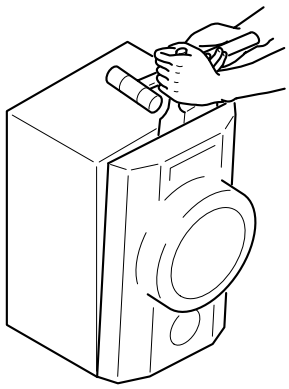


Fig-2

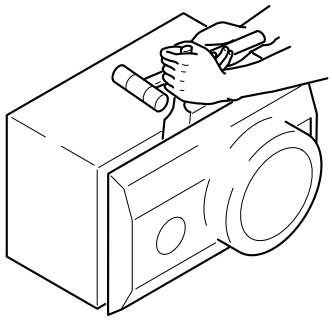


Fig-3

How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

SPEAKER PARTS LIST
SX-NBL11(YSC9,YSC,YSL)

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-NSB-001-010		PANEL,FR
2	8A-NSB-003-010		GRILLE,FRAME ASSY
3	8Z-NSL-603-010		SPKR, W 120<YSC9>
3	8A-NSL-606-010		SPKR, W120<YSC,YSL>
4	87-NS7-611-010		CORD,SPKR

ACCESSORIES / PACKAGE LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-NFZ-927-010		IB,EZ(9L)E-DR4
2	8Z-NF9-701-210		RC UNIT,ZAS02
3	87-A90-118-010		ANT,WIRE FM (Z)
4	87-006-225-010		AM LOOP ANT NC2

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)
AIWA CO.,LTD. 2–11, IKENOHATA 1–CHOME, TAITO-KU, TOKYO 110, JAPAN TEL:03 (3827) 3111

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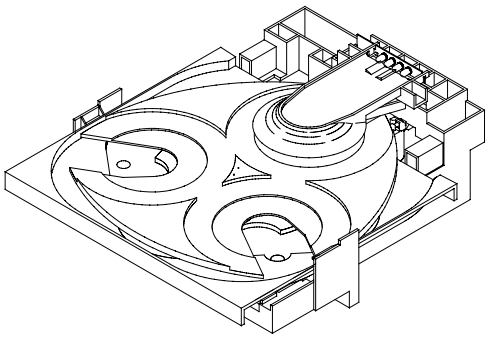
aiwa SERVICE

AZG-1

English



SERVICE MANUAL

CD MECHANISM

BASIC CD MECHANISM : KSM-880CAB

TYPE
Z8RMDJM

aiwa

S/M Code No. 09-001-335-3N2

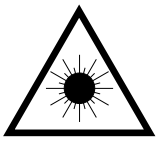
DATA

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

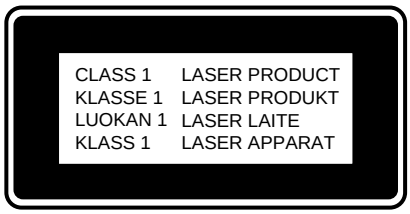
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

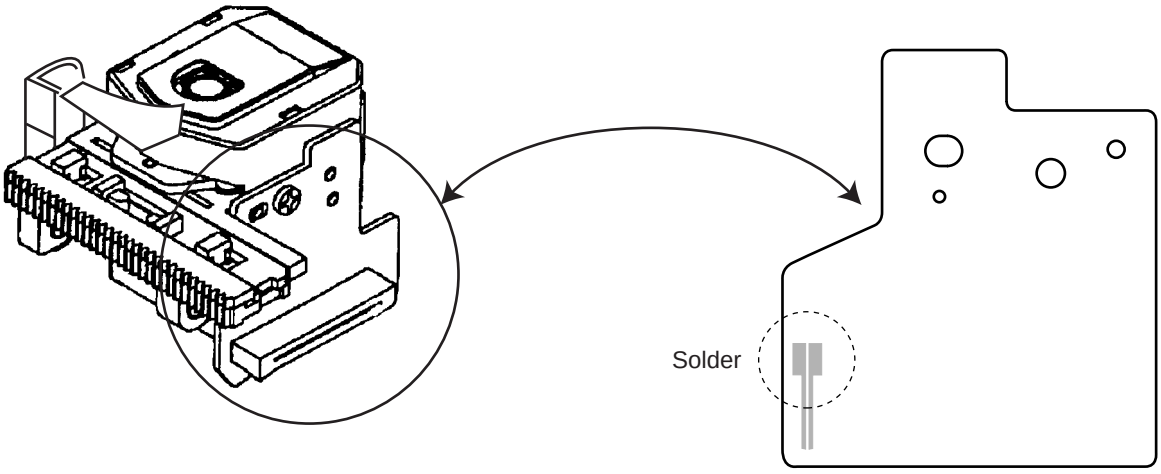
This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.



Precaution to replace Optical block

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

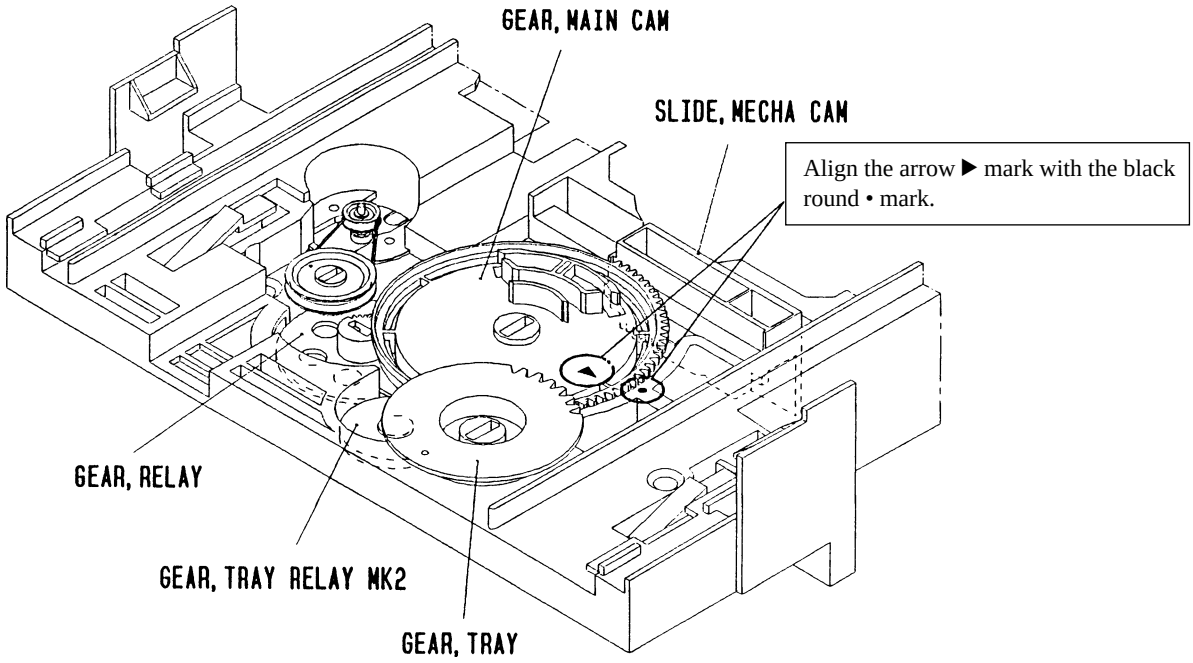
1) After the connection, remove solder shown in the figure below.



How to Adjust the Rotating Phase of the Gear, Main Cam

1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

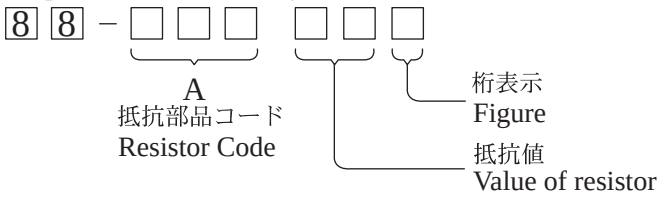
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-446-010		C-IC,LA9241ML
	87-A21-319-010		C-IC,LC78622NE
	87-A20-445-010		IC,BA5936
TRANSISTOR			
	87-026-609-080		TR,KTA1266GR
	87-026-295-080		TR,DTC144TK
	87-A30-087-080		C-FET,2SK2158
	87-026-237-080		CHIP-TR,DTC124XK
	87-A30-076-080		C-TR,2SC3052F
	87-A30-075-080		C-TR,2SA1235F
DIODE			
	87-020-465-080		DIODE,1SS133 (110MA)
	87-020-331-080		CHIP-DIODE,DAN202K
	87-A40-337-080		ZENER,MTZJ 6.8B
	87-A40-313-080		C-DIODE,MC 2840
	87-A40-620-080		ZENER,MTZJ6.2A
3CD C.B			
C11	87-012-393-080		C-CAP,S 0.22-16 R K
C12	87-012-157-080		C-CAP,S 330P-50 CH
C13	87-016-369-080		C-CAP,S 0.033-25 B K
C14	87-A10-201-080		C-CAP,S0.33-16 KB
C15	87-010-213-080		C-CAP,S 0.015-50 B
C16	87-016-083-080		C-CAP,S 0.15-16 RK
C17	87-010-184-080		CHIP CAPACITOR 3300P(K)
C18	87-A11-177-080		C-CAP,S 0.15-16 K B
C19	87-010-992-080		C-CAP,S 0.047-25 B
C20	87-010-178-080		CHIP CAP 1000P
C21	87-012-393-080		C-CAP,S 0.22-16 R K
C22	87-016-083-080		C-CAP,S 0.15-16 RK
C23	87-010-197-080		CAP, CHIP 0.01 DM
C24	87-010-186-080		CAP,CHIP 4700P
C25	87-010-400-040		CAP,E 0.47-50
C26	87-010-322-080		C-CAP,S 100P-50 CH
C27	87-010-382-040		CAP,E 22-25 SME
C28	87-010-545-040		CAP,E 0.22-50 SME
C29	87-010-184-080		CHIP CAPACITOR 3300P(K)
C31	87-010-186-080		CAP,CHIP 4700P
C32	87-010-315-080		C-CAP,S 27P-50 CH
C33	87-016-081-080		C-CAP,S 0.1-16 RK
C35	87-010-196-080		CHIP CAPACITOR,0.1-25
C37	87-010-405-080		CAP, ELECT 10-50V
C38	87-010-263-080		CAP, ELECT 100-10V
C39	87-010-197-080		CAP, CHIP 0.01 DM
C40	87-010-401-080		CAP, ELECT 1-50V
C41	87-016-081-080		C-CAP,S 0.1-16 RK
C42	87-010-263-080		CAP, ELECT 100-10V
C43	87-010-197-080		CAP, CHIP 0.01 DM
C44	87-010-263-080		CAP, ELECT 100-10V
C46	87-010-196-080		CHIP CAPACITOR,0.1-25
C47	87-010-260-080		CAP, ELECT 47-25V
C48	87-010-196-080		CHIP CAPACITOR,0.1-25
C49	87-010-404-080		CAP, ELECT 4.7-50V
C50	87-010-197-080		CAP, CHIP 0.01 DM
C51	87-010-263-040		CAP,E 100-10
C52	87-012-156-080		C-CAP,S 220P-50 CH
C71	87-012-393-080		C-CAP,S 0.22-16 R K
C101	87-016-369-080		C-CAP,S 0.033-25 B K
C102	87-016-081-080		C-CAP,S 0.1-16 RK
C103	87-010-318-080		C-CAP,S 47P-50 CH
C104	87-012-154-080		C-CAP,S 150P-50 CH
C105	87-010-196-080		CHIP CAPACITOR,0.1-25
C109	87-010-197-080		CAP, CHIP 0.01 DM
C111	87-010-312-080		C-CAP,S 15P-50 CH
C112	87-010-154-080		CAP CHIP 10P
C113	87-010-178-080		CHIP CAP 1000P
C115	87-010-404-080		CAP, ELECT 4.7-50V
C116	87-010-196-080		CHIP CAPACITOR,0.1-25
C117	87-010-263-040		CAP,E 100-10
C118	87-010-178-080		CHIP CAP 1000P
C121	87-010-403-080		CAP, ELECT 3.3-50V
C122	87-010-403-080		CAP, ELECT 3.3-50V
C123	87-010-180-080		C-CER 1500P
C124	87-010-180-080		C-CER 1500P
C132	87-010-196-080		CHIP CAPACITOR,0.1-25
C135	87-010-314-080		C-CAP,S 22P-50V
C191	87-010-263-040		CAP,E 100-10
C192	87-010-178-080		CHIP CAP 1000P
C193	87-010-196-080		CHIP CAPACITOR,0.1-25
C201	87-010-196-080		CHIP CAPACITOR,0.1-25
C204	87-010-196-080		CHIP CAPACITOR,0.1-25
C205	87-010-196-080		CHIP CAPACITOR,0.1-25
C206	87-010-196-080		CHIP CAPACITOR,0.1-25
C207	87-010-196-080		CHIP CAPACITOR,0.1-25
C208	87-010-196-080		CHIP CAPACITOR,0.1-25
C211	87-010-405-040		CAP,E 10-50
C212	87-010-405-040		CAP,E 10-50
C213	87-010-196-080		CHIP CAPACITOR,0.1-25
C251	87-010-322-080		C-CAP,S 100P-50 CH
C252	87-010-322-080		C-CAP,S 100P-50 CH
C253	87-010-322-080		C-CAP,S 100P-50 CH
C281	87-010-382-040		CAP,E 22-25 SME
C401	87-A10-730-080		CAP,E 1000-16 SMG
C402	87-010-197-080		CAP, CHIP 0.01 DM
C403	87-010-196-080		CHIP CAPACITOR,0.1-25
C404	87-010-260-040		CAP,E 47-25 SME
C405	87-010-382-080		CAP, ELECT 22-25V
C421	87-010-382-080		CAP, ELECT 22-25V
C422	87-010-196-080		CHIP CAPACITOR,0.1-25
C901	87-010-260-080		CAP, ELECT 47-25V
C902	87-010-196-080		CHIP CAPACITOR,0.1-25
CN1	87-A60-429-010		CONN,16P H TOC-A
CN2	87-099-199-010		CONN,6P 6216 H
CN201	87-099-030-010		CONN,13P 6216H
CN203	87-099-212-010		CONN,5P 6216 V
CN204	84-ZG1-648-010		CONN ASSY,6P
CN501	87-A60-666-010		CONN,2P H 2MM JMT
FB501	87-A50-189-080		C-COIL,S BLM21B272S
L11	87-005-849-080		COIL,10UH(CECS)
L101	87-005-614-080		COIL 100UH LAV35 J
L102	87-005-602-080		COIL,10UH LAV35 J
LED901	87-A40-558-010		LED,SLZ-8128A-01-A
M201	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
SFR101	87-A90-787-080		SFR,100K H HOKU
SW201	87-036-109-010		SW,MICRO SPPB61
SW202	87-036-109-010		SW,MICRO SPPB61
X101	87-A70-046-010		VIB,XTAL 16.934MHZ
LED C.B			
LED301	87-A40-263-080		LED,SLH-56PCT31 GRN
LED302	87-A40-268-080		LED,SLH-56DCT31 ORN
LED303	87-A40-268-080		LED,SLH-56DCT31 ORN
LED304	87-A40-263-080		LED,SLH-56PCT31 GRN
T-T C.B			
C401	87-018-214-080		CAP TC U 0.1-50F
CON401	86-NFZ-675-010		CONN,5P H 6216-11H
M401	87-045-364-010		MOTOR(BCH3B14)
PS401	87-026-573-010		SNSR,PHOTO GP1S53V

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
MOTOR C.B							
PIN3	91-564-722-110		CONN,PIN 6P				
SW1	91-572-085-110		LEAF SWITCH				

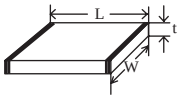
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

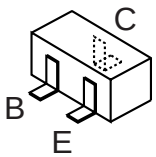
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

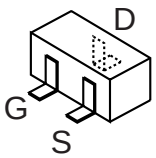
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION



2SA1235F
2SC3052F
DTC124XK
DTC144TK

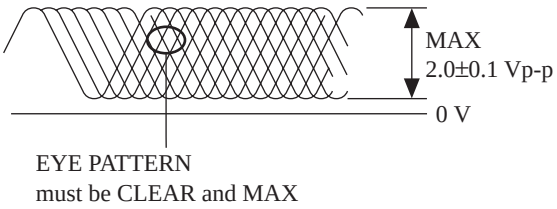
KTA1266GR



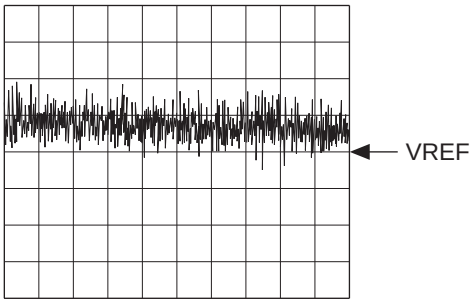
2SK2158

WAVE FORM

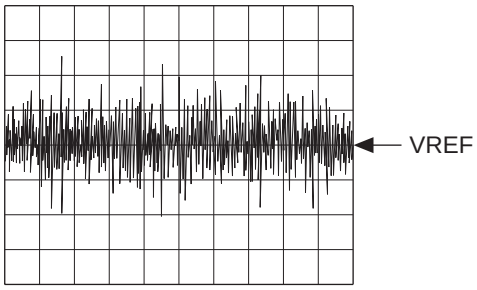
① IC11 Pin ㊶ (RFSH) VOLT/DIV: 0.5V
TIME/DIV: 1µS



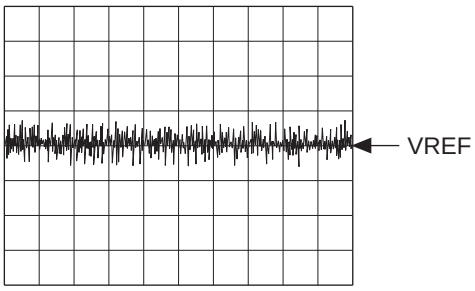
② IC11 Pin ⑯ (FD) VOLT/DIV: 100mV
TIME/DIV: 1mS



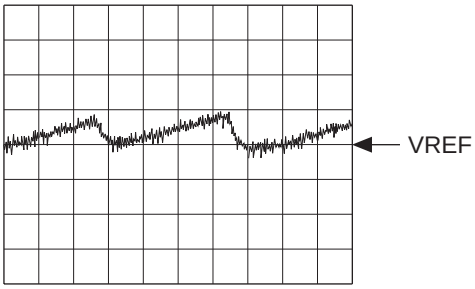
③ IC11 Pin ⑮ (TO) VOLT/DIV: 100mV
TIME/DIV: 1mS



④ IC11 Pin ㉗ (SPD) VOLT/DIV: 100mV
TIME/DIV: 1mS

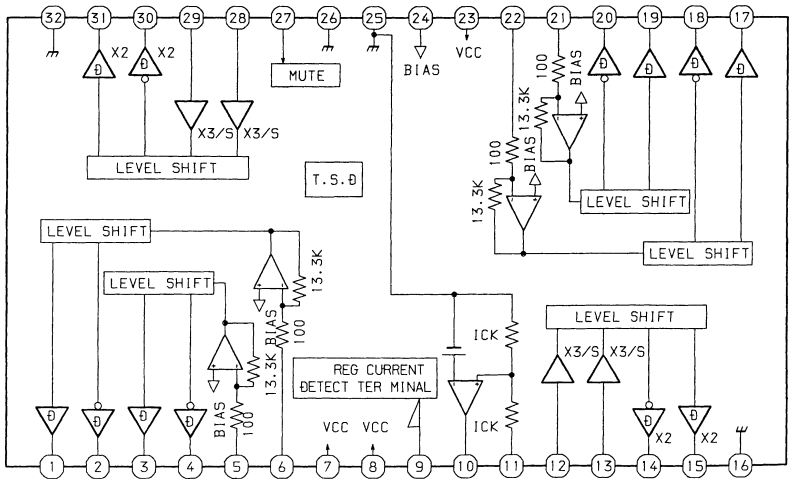


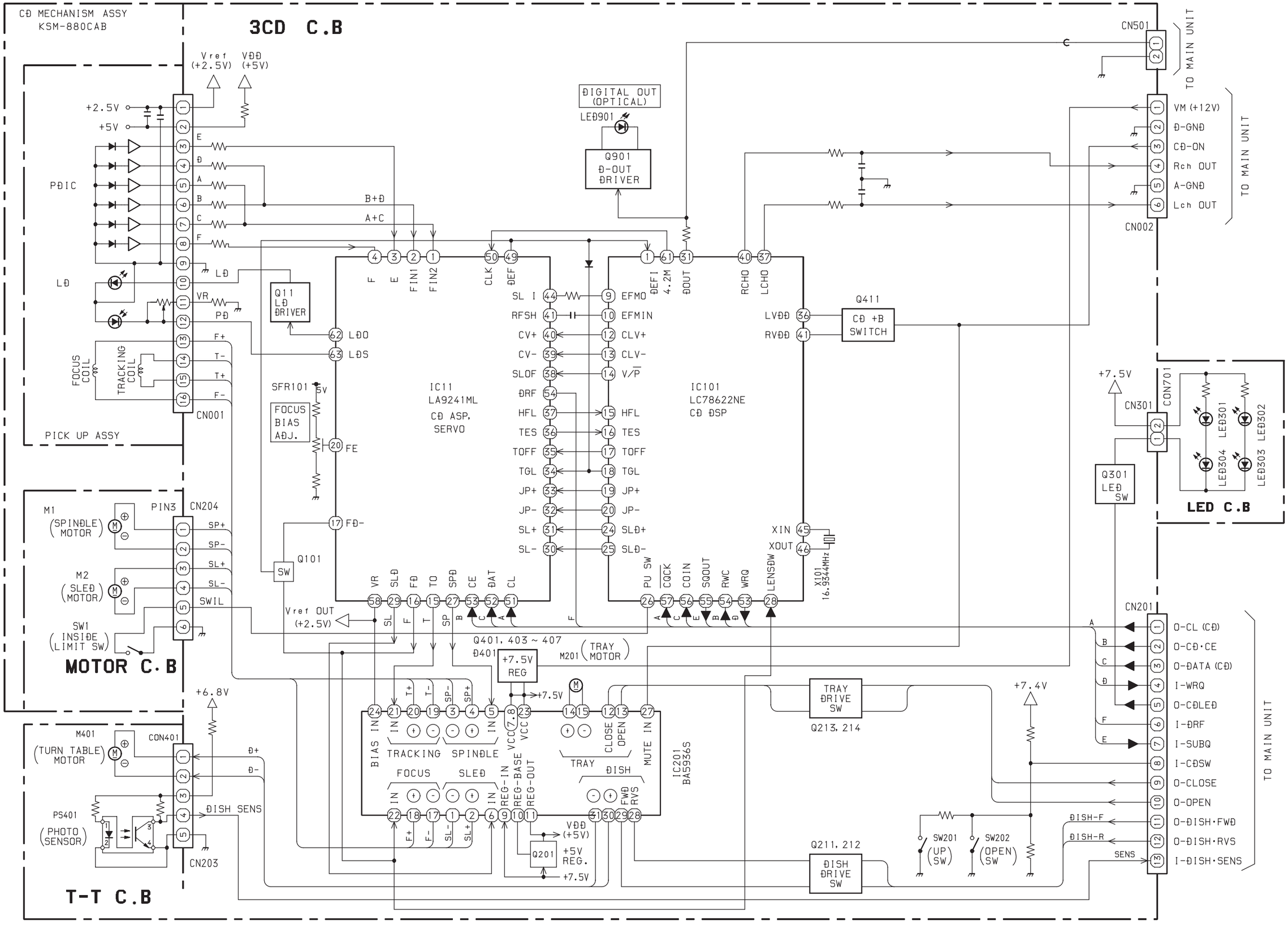
⑤ IC11 Pin ㉙ (SLD) VOLT/DIV: 200mV
TIME/DIV: 2S

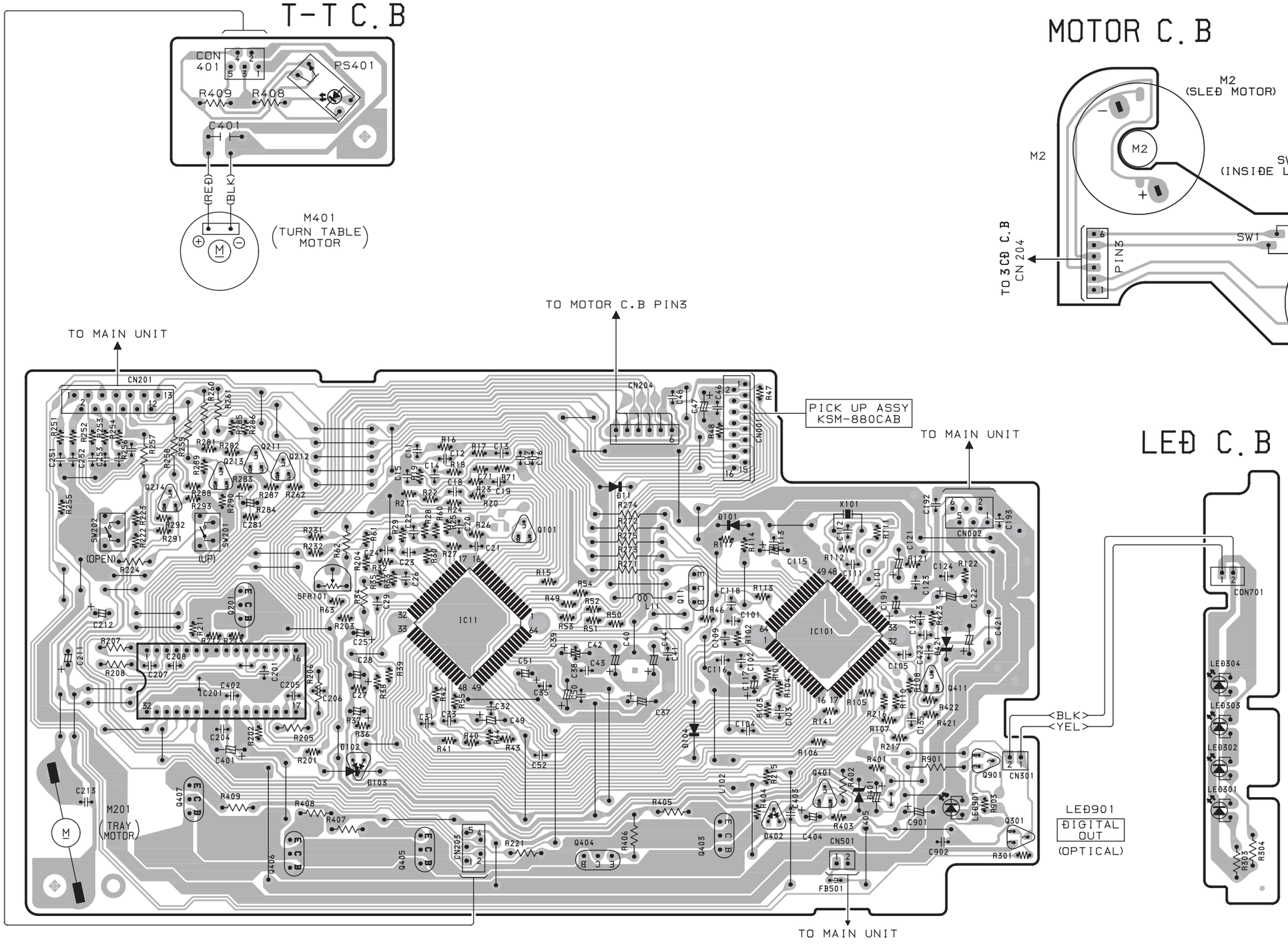


IC BLOCK DIAGRAM

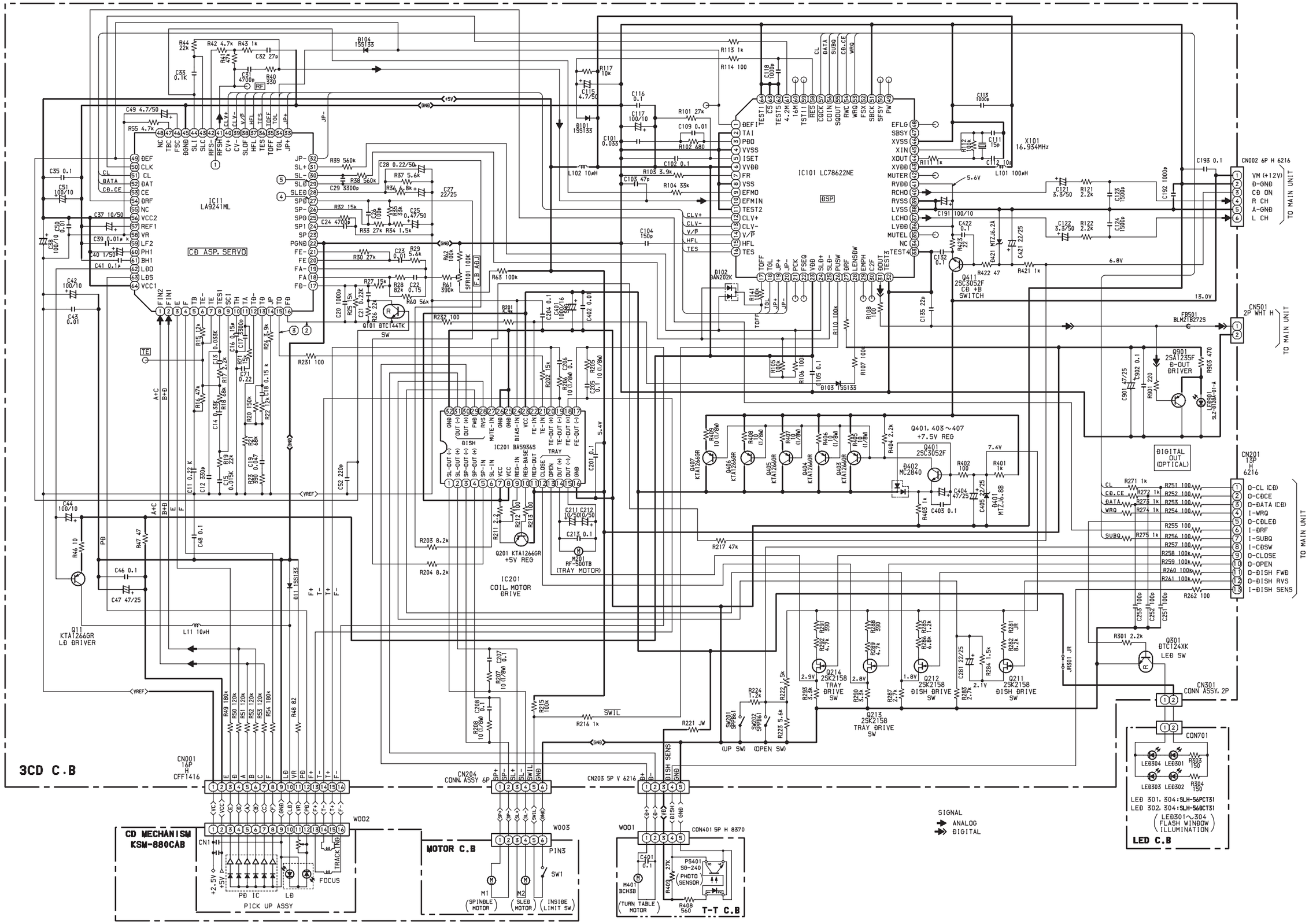
IC, BA5936S




CD MECHANISM ASSY
KSM-880CAB
3CD C.B
PICK UP ASSY
PDIC
LD
FOCUS COIL
TRACKING COIL
CN001
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
E
D
A
B
C
F
LD
VR
PD
F+
T-
T+
F-
B+D
A+C
Q11 LD DRIVER
SFR101
5V
FOCUS BIAS ADJ.
FE
FD-
Q101
SW
Vref OUT (+2.5V)
IC11
LA9241ML
CD ASP, SERVO
IC101
LC78622NE
CD DSP
DIGITAL OUT (OPTICAL)
LED901
Q901 D-OUT DRIVER
CN501
TO MAIN UNIT
VM (+12V)
D-GND
CD-ON
Rch OUT
A-GND
Lch OUT
CN002
Q411
CD +B SWITCH
+7.5V
CN301
CON701
Q301 LED SW
LED304 LED301 LED303 LED302
LED C.B
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
PIN3
CN204
SP+
SP-
SL+
SL-
SWIL
MOTOR C.B
Q401, 403 ~ 407
D401
+7.5V REG
M201 (TRAY MOTOR)
TRAY DRIVE SW
Q213, 214
+6.8V
+7.4V
M401 (TURN TABLE MOTOR)
CON401
D+
D-
PS401 (PHOTO SENSOR)
DISH SENS
CN203
T-T C.B
TRACKING
SPINDLE
FOCUS
SLED
TRAY
DISH
IC201
BA5936S
VDD (+5V)
Q201
+5V REG.
+7.5V
Q211, 212
DISH DRIVE SW
SW201 (UP SW)
SW202 (OPEN SW)
CN201
O-CL (CD)
O-CD·CE
O-DATA (CD)
I-WRQ
O-CDLED
I-DRF
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH·FWD
O-DISH·RVS
I-DISH·SENS
DISH-F
DISH-R
SENS
X101
16.9344MHz


T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE) MOTOR
MOTOR C.B
M2
(SLED MOTOR)
M2
SW1
(INSIDE LIMIT SW)
M1
(SPINDLE MOTOR)
SW1
PIN3
TO 3CD C.B CN 204
M1
TO MOTOR C.B PIN3
TO MAIN UNIT
CN201
CN204
PICK UP ASSY KSM-880CAB
TO MAIN UNIT
LED C.B
IC11
IC101
X101
CN002
CON701
LED304
LED303
LED302
LED301
SW202
(OPEN)
SW201
(UP)
SFR101
M201
(TRAY MOTOR)
CN205
CN501
FB501
CN001
CN301
Q901
LED901
R903
Q301
R301
LED901
DIGITAL OUT
(OPTICAL)
BLK
YEL
TO MAIN UNIT

3CD C.B


IC11 LA9241ML
CD ASP. SERVO
IC101 LC78622NE
DSP
IC201 BA5936S
TRAY
DISH
IC201 COIL MOTOR DRIVE
X101 16.934MHz
3CD C.B
CD MECHANISM KSM-880CAB
PICK UP ASSY
MOTOR C.B
T-T C.B
LED C.B
CN002 6P H 6216
TO MAIN UNIT
CN501 2P WHT H
CN201 13P H 6216
CN301 CONN ASSY. 2P
CN001 16P H CFF1416
CN204 CONN ASSY 6P
CN203 5P V 6216
CN401 5P H 8370
CON701
Q401, 403~407 +7.5V REG
Q201 KTA1266GR +5V REG
Q11 KTA1266GR LD DRIVER
Q214 2SK2158 TRAY DRIVE SW
Q213 2SK2158 TRAY DRIVE SW
Q212 2SK2158 DISH DRIVE SW
Q211 2SK2158 DISH DRIVE SW
Q411 2SC3052F CD +B SWITCH
Q901 2SA1235F D-OUT DRIVER
Q301 DTC124XK LED SW
Q402 MC2840
Q401 2SC3052F
M201 RF-500TB (TRAY MOTOR)
M401 BCH5B (TURN TABLE MOTOR)
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
PS401 SG-240 (PHOTO SENSOR)
PD IC
LD
FOCUS
TRACKING
SW
(UP SW)
(OPEN SW)
DIGITAL OUT (OPTICAL)
SIGNAL
ANALOG
DIGITAL
LED 301, 304: SLH-56PCT31
LED 302, 304: SLH-56BCT31
(LED301~304 FLASH WINDOW ILLUMINATION)
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
5.6V
6.8V
13.0V
7.4V
2.9V
2.8V
1.8V
2.1V
+5V
GND
VREF

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

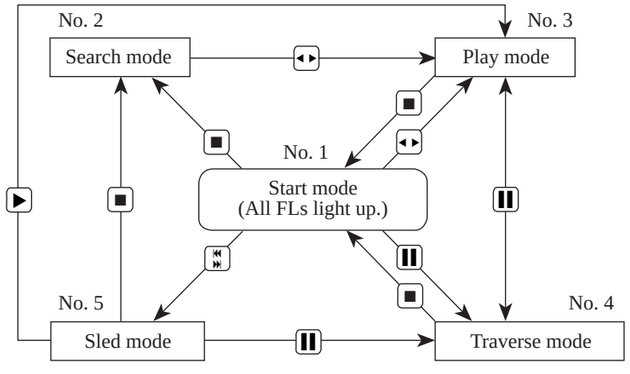
2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • CD block power is ON.	• FL display check (All displays light.)
Search mode No.2	■ key		• Laser diode turns always ON. • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀ ▶ key		• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check DRF
Traverse mode No.4	▌▌ key		• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) check
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.
* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ▌▌ status is active. If they are pressed, playback will not be possible after the ▌▌ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ▌▌ status, press the ■ key and return to the start mode (No.1).
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

IC DESCRIPTION

IC, LC78622NE

Pin No.	Pin Name	I/O	Description	
1	DEFI	I	Defect sense signal (DEF) input pin. (Connect to 0V when not used).	
2	TAI	I	For PLL.	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
3	PDO	O		Phase comparator output pin to control external VCO.
4	VVSS	—		GND pin for built-in VCO. Be sure to connect to 0V.
5	ISET	I		Pin to which external resistor adjusting the PD0 output current.
6	VVDD	—		Power supply pin for built-in VCO.
7	FR	I		Pin for VCO frequency range adjustment.
8	VSS	—	Digital system GND. Be sure to connect to 0V.	
9	EFMO	O	For slice level control.	EFM signal output pin.
10	EFMIN	I		EFM signal input pin.
11	TEST2	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
12, 13	CLV+, CLV–	O	Disc motor control output. Three level output is possible using command.	
14	V/$\overline{P}$	O	Rough servo or phase control automatic selection monitoring output pin. Rough servo at H. Phase servo at L.	
15	HFL	I	Track detect signal input pin. Schmidt input.	
16	TES	I	Tracking error signal input pin. Schmidt input.	
17	TOFF	O	Tracking OFF output pin.	
18	TGL	O	Tracking gain selection output pin. Gain boost at L.	
19, 20	JP+, JP–	O	Track jump control signal output pin. Three level output is possible using command.	
21	PCK	O	EFM data playback clock monitoring pin 4.3218 MHz when phase is locked in.	
22	FSEQ	O	Sync signal detection output pin. H when the sync signal which is detected from EFM signal and thesync signal which is internally generated agree.	
23	VDD	—	Digital system power supply pin.	
24	SLD+	I/O	General purpose input/output pin 1 to 5.	The pin is controlled by the serial data command from microprocessor. When the pin is not used, set the pin to the input terminal and connect to 0V, or alternately set the pin to output terminal and leave the pin open.
25	SLD-	I/O		
26	PUSW	I/O		
27	DRF	I/O		
28	LENSDW	I/O		
29	EMPH	O	De-emphasis monitor output pin. De-emphasis disc is being played back at H.	
30	C2F	O	C2 flag output pin.	
31	DOUT	O	DIGITAL OUT output pin. (EIAJ format).	
32, 33	TEST3, TEST4	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
34	N.C.	—	Not used. Set the pin to open.	
35	MUTEL	O	L-channel 1-bit DAC.	L-channel mute output pin.
36	LVDD	—		L-channel power supply pin.
37	LCHO	O		L-channel output pin.
38	LVSS	—		L-channel GND. Be sure to connect to 0V.
39	RVSS	—	R-channel 1-bit DAC.	R-channel GND. Be sure to connect to 0V.
40	RCHO	O		R-channel output pin.
41	RVDD	—		R-channel power supply pin.
42	MUTER	O		R-channel mute output pin.

Pin No.	Pin Name	I/O	Description
43	XVDD	—	Crystal oscillator power supply pin.
44	XOUT	O	Pin to which external 16.9344 MHz crystal oscillator is connected.
45	XIN	I	
46	XVSS	—	Crystal oscillator GND pin. Be sure to connect to 0V.
47	SBSY	O	Subcode block sync signal output pin.
48	EFLG	O	C1, C2, single and dual correction monitoring pin.
49	PW	O	Subcode P, Q, R, S, T, U and W output pin.
50	SFSY	O	Subcode frame sync signal output pin. Falls down when subcode enters standby.
51	SBCK	I	Subcode read clock input pin. Schmidt input. (Be sure to connected to 0V when not in use.)
52	FSX	O	Pin outputting the 7.35 kHz sync signal which is generated by dividing frequency of crystal oscillator.
53	WRQ	O	Subcode Q output standby output pin.
54	RWC	I	Read/write control input pin. Schmidt input.
55	SQOUT	O	Subcode Q output pin.
56	COIN	I	Command input pin from microprocessor.
57	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read input clock from SQOUT pin
58	$\overline{\text{RES}}$	I	LC78622 reset input pin. Set this pin to L once when the main power is turned on.
59	TST11	O	Test signal output pin. Use this pin as open (normally L output).
60	16M	O	16.9344 MHz output pin.
61	4.2M	O	4.2336 MHz output pin.
62	TEST5	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
63	$\overline{\text{CS}}$	I	Chip select signal input pin with built-in pull-down resistor. Be sure to connect to 0V while it is not controlling.
64	TEST1	I	Test signal input pin without built-in pull-down resistor. Be sure to connect to 0V.

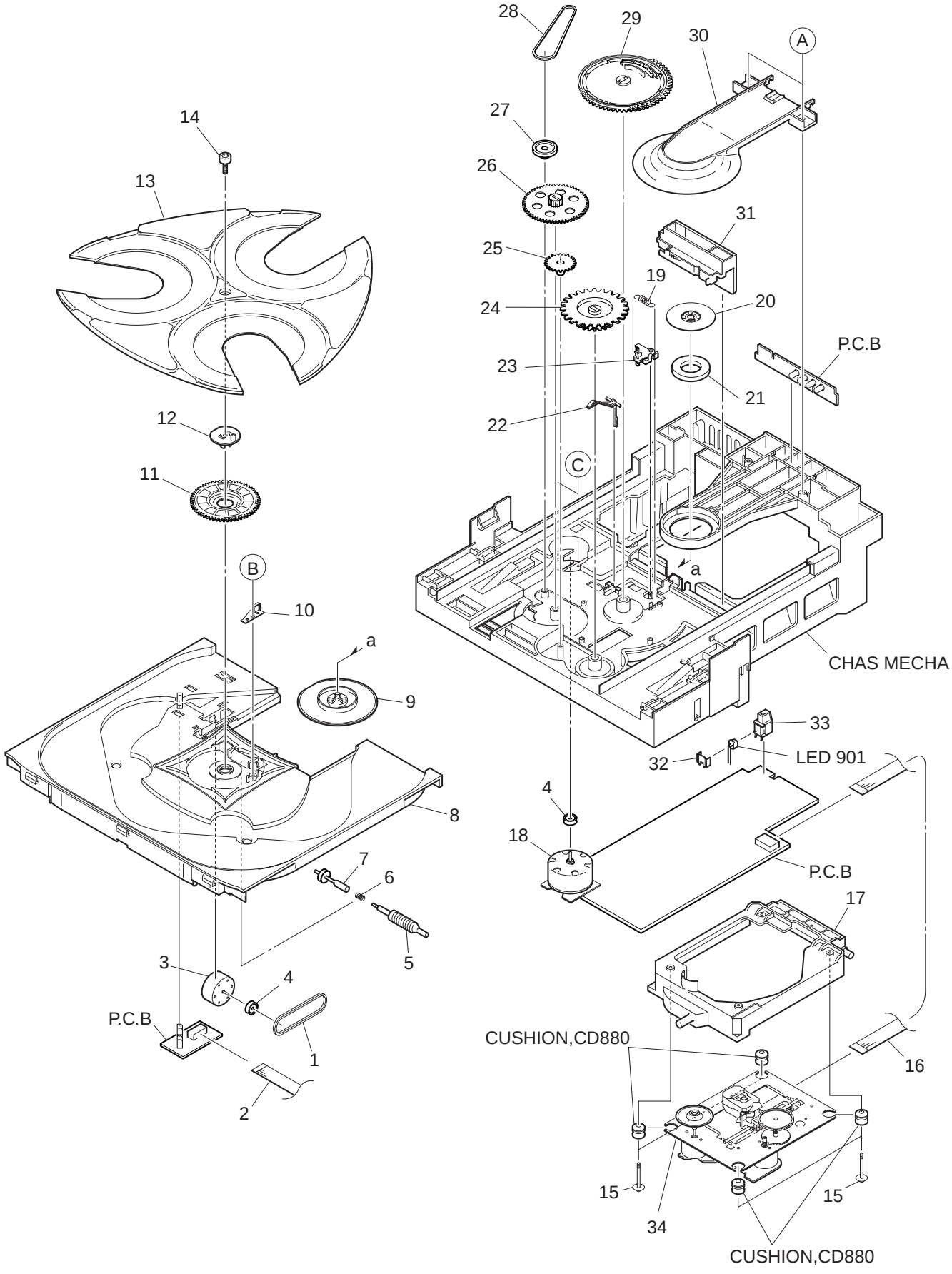
Note: The same potential must be applied to the respective power supply terminals. (VDD, VVDD, LVDD, RVDD, XVDD)

IC, LA9241ML

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal.
2	FIN1	I	Pin to which external pickup photo diode is connected.
3	E	I	Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.
4	F	I	Pin to which external pickup photo diode is connected.
5	TB	I	DC component of the TE signal is input.
6	TE–	I	Pin to which external resistor setting the TE signal gain is connected between the TE pin.
7	TE	O	TE signal output pin.
8	TESI	I	TES “Track Error Sense” comparator input pin. TE signal is passed through a band-pass filter then input.
9	SCI	I	Shock detection signal input pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD–	I	Pin to which external tracking phase compensation constants are connected between the TD and VR pins.
13	TD	I	Tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD–	I	Pin to which external focusing phase compensation constants are connected between the FD and FA pins.
18	FA	I	Pin to which external focusing phase compensation constants are connected between the FD– and FA– pins.
19	FA–	I	Pin to which external focusing phase compensation constants are connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE–	I	Pin to which external FE signal gain setting resistor is connected between the FE pin.
22	PGND	—	Analog signal GND.
23	SP	—	No connection.
24	SP1	O	Single ended output of the CV+ and CV– pin input signal.
25	SPG	I	Pin to which external spindle gain setting resistor in 12 cm mode is connected.
26	SP–	I	Pin to which external spindle phase compensation constants are connected together with SPD pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Pin to which external sled phase compensation constants are connected.
29	SLD	O	Sled control signal output pin.
30, 31	SL–, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP–, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input from DSP. Low gain when TGL = H.
35	TOFF	I	Tracking off control signal input pin from DSP. Off when TOFF = H.

Pin No.	Pin Name	I/O	Description
36	TES	O	Pin from which TES signal is output to DSP.
37	HFL	O	“High Frequency Level” is used to judge whether the main beam position is on top of bit or on top of mirror.
38	SLOF	I	Sled servo off control input pin.
39, 40	CV–, CV+	I	CLV error signal input pin from DSP.
41	RFSH	O	RF output pin.
42	RFS–	I	RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	“Slice Level Control” is the output pin which controls the RF signal data slice level by DSP.
44	SLI	I	Input pin which control the data slice level by the DSP.
45	DGND	—	Digital system GND.
46	FSC	O	Output pin to which external focus search smoothing capacitor is connected.
47	TBC	I	“Tracking Balance Control” EF balance variable range setting pin.
48	NC	—	No connection.
49	DEF	O	Disc defect detector output pin.
50	CLK	I	Reference clock input pin. 4.23 MHz of the DSP is input.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	“Detect RF” RF level detector output.
55	NC	I	No connection.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REF1	—	Pin to which external bypass capacitor for reference voltage is connected.
58	VR	O	Reference voltage output pin.
59	LF2	I	Disc defect detector time constant setting pin.
60	PH1	I	Pin to which external capacitor for RF signal peak holding is connected.
61	BH1	I	Pin to which external capacitor for RF signal bottom holding is connected.
62	LDO	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL PARTS LIST 1/1

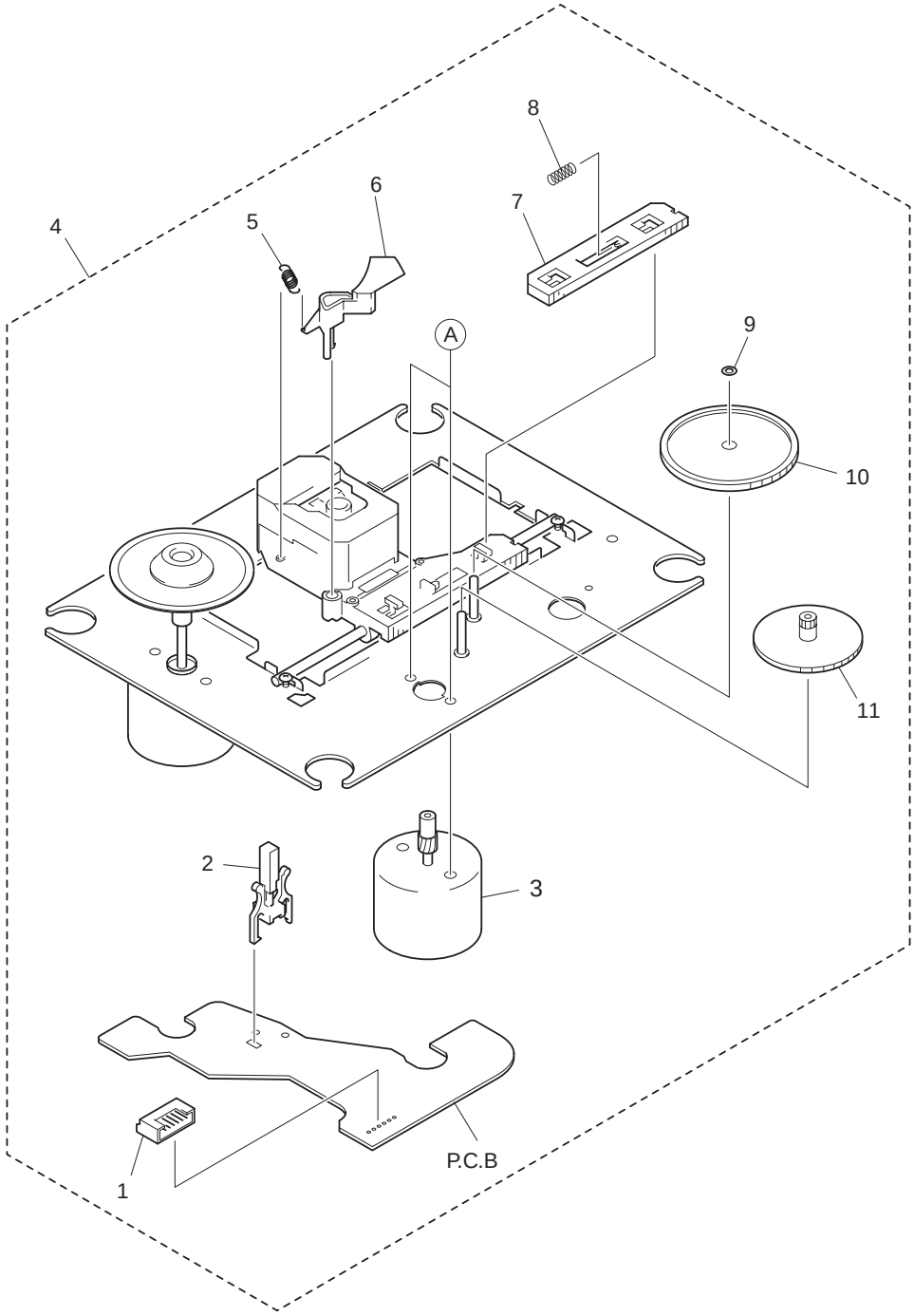
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-225-010		BELT,SQ1.0-63.3
2	84-ZG1-673-010		F-CABLE,5P 1.25 210MM BLACK N
3	87-045-364-010		MOTOR(BCH3B14)
4	84-ZG1-267-010		PULLEY,LOAD MO 8
5	84-ZG1-238-010		GEAR,WORM N
6	84-ZG1-248-010		SPR-C,WORM
7	84-ZG1-239-210		PULLY,WORM N
8	84-ZG1-008-210		TRAY,NO3
9	84-ZG1-243-210		HLDR,MAGNET N(J)
10	84-ZG1-259-010		SPR-P,WORM
11	84-ZG1-269-010		GEAR,MAIN TT 4
12	84-ZG1-224-010		LEVER,TT
13	84-ZG1-005-210		TURNTABLE,NO1(*)
14	81-ZG1-239-010		S-SCREW,TT
15	8A-ZG1-201-010		S-SCREW,MECH 880
16	85-NFT-611-110		FF-CABLE 16P-1.0
17	84-ZG1-299-210		HLDR,MECHA NO3
18	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
19	84-ZG1-211-010		SPR-E CAM S
20	81-ZG1-255-110		PLATE,MAGNET MK2
21	83-ZG3-604-010		RING,MAG 2
22	83-ZG3-213-010		LVR,SW
23	84-ZG1-266-010		LEVER,CAN 8
24	84-ZG1-205-210		GEAR,TRAY (*)
25	81-ZG1-291-110		GEAR,TRAY RELAY NO3
26	84-ZG1-274-010		GEAR,RELAY 8
27	84-ZG1-207-010		PULLEY,RELAY
28	84-ZG1-209-010		BELT,SQ1.8-117.7
29	84-ZG1-215-410		GEAR,MAIN CAM BLU
30	84-ZG1-011-010		REFLECTOR,CD
31	84-ZG1-216-310		SLIDE,MECHA CAM YEL
32	84-ZG1-261-010		LID,OPTICAL
33	84-ZG1-244-310		CABI,OPTICAL
34	M8-ZZK-C90-070		KSM-880CAB
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-067-981-010		BVT2+3-6 BLK
C	87-251-070-410		U+2.6-3

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

CD MECHANISM EXPLODED VIEW 1/1



CD MECHANISM PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	91-564-722-110		CONN,PIN 6P
2	91-572-085-110		LEAF SWITCH
3	9X-264-655-010		SL MOTORR ASSY
4	M8-ZZK-C90-070		KSM-880CAB
5	92-647-416-020		SPRING EXTENSION
6	92-647-595-020		SHUTTER B
7	92-647-732-010		NS SLIDE RACK
8	92-647-742-010		SPRING COMPRESSION
9	93-321-813-110		POLI WASHER
10	92-647-407-010		GEAR A
11	92-647-408-020		GEAR B
A	93-713-786-510		SCREW,+P2-3

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

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0251431
Printed in Singapore